Gokhale Institute of Politics and Economics,
Publication No. 7

A Survey
OF
Farm Business in Wai Taluka

BY

D. R. GADGIL, M.A., M. Litt (Cantab.)
AND
V. R. GADGIL, B.Ag. (Bom.), M.Sc. (Calif.)

[Price Rs. 2-8]

1940

Printed at the Aryabhushan Press, House No. 915/1, Peth Bhamburda
Poona City, by Mr. Vithal Hari Barve, and Published
by D. R. Gadgil, M.A., M.Litt. (Cantab.) at the
Gokhale Institute of Politics and Economics, Poona 4.

PREFACE

This publication embodies the results of a project on which the Institute has been at work for many years past. It is also, we hope, the first of a series dealing in detail with the different aspects of the agricultural economy of the particular tract.

In the conduct of the survey, whose report is presented herewith, we received two types of help. The first was financial help. This was received from the Imperial Council of Agricultural Research. In so far as one of the chief claims made for the survey method, whose application to India is demonstrated in this publication, is its cheapness it would not be out of place here to give some information regarding expenditure incurred in connection with the survey. The original budgeted cost of the project (excluding cost of publication) was estimated at Rs. 14,400; and it was thought that the entire work in connection with the survey would be completed within two years. The original estimate was exceeded and the actual cost finally came up to Rs. 17,000 approximately. The time taken also, for a variety of reasons, exceeded the original estimate by about 6 months. The total number of farm schedules filled in was about 1100. The cost per schedule thus worked out at a little over Rs. 15, which may be considered cheap. It should be remembered that this was an experimental and a pioneering project. The cost and especially the time required at this stage would be necessarily greater than when investigation follows an established method. The Imperial Council of Agricultural Research gave a grant of Rs. 7,200 (half of the original estimate) towards the cost of the survey. It would have been impossible for the Institute to undertake this work in the absence of this substantial help received from the Council and we are deeply grateful to the Council for the grant given by it.

The other type of help which we must gratefully acknowledge here was that received in obtaining the co-operation of the farmers of the tract in the work of the survey. Willing co-operation of the farmers was a necessary condition precedent to the conduct of the survey; without it all our efforts would have been fruitless. Initially we had to contend with both lack of confidence and apathy. Many farmers were, for example, afraid that the data were being collected by the Government through the Institute with the ultimate aim of enhancing the land revenue. Considerable propaganda had to be carried out during the initial months in order to remove such misunderstandings and in order to create interest among farmers in our work, A leaflet signed by influential persons and prominent cultivators in the tract assuring the cultivators that our efforts at collecting information were in no way prejudicial to their interests was widely circulated in the tract. Meetings of farmers were also held in every one of the villages from which we selected the farmers and the objectives of the survey and its utility were explained at these meetings. This preliminary work took up a lot of time, but it was both essential and useful. A very large number of farmers and others throughout the tract rendered invaluable help to us in this work. The leaflet, mentioned above, was signed by 120 persons belonging to 24 different places. A large number of persons, apart from the signatories, were also helpful to us in creating confidence and interest in our work among the body of farmers It is not possible to mention the names of the many individuals who helped us in this manner and we record at this place our gratefulness to all of them.

Poona,
7-6-1940.

D. R. GADGIL
V. R. GADGIL

CONTENTS

Page
Summary x

PART I

Chapter I Procedure and Method ... ... 1—28
(1) Preliminary 1
(2) The Sample ... ...
(A) The Tract 2
(B) The Villages 3
(C) The Farmers 4
(3) Reliability of Data 6
(4) Modifications Adopted and Suggested ... 9
(5) The Modified Schedules 11
(6) Notes on Individual Schedule Forms ... 13

PART II

Chapter II General Description of the Tract ... ... 29—37
(1) Location and Physical Features 29
(2) Area and Population 31
(3) Rainfall 32
(4) Soils 33
(5) Crops 33
(6) Roads 35
(7) Markets 35
Chapter III Seasons and Prices ... ... 38—43
(1) Season in 1936–37 38
(2) Season in 1937–38 38
(3) Prices 40
Chapter IV Definitions ... ... 44—47
Chapter V Size and Nature of Farm Business ... ... 48—94
(1) Size of Farm 50
(2) Distribution of Farm Area 53
(3) Investment 57
(4) Livestock 62
(5) Crop Combinations 62
(6) Livestock Products 66
(7) Crop Receipts 67
(8) Total Farm Receipts 76
(9) Farm Expenses 79

(10). Profit and Loss 88
(11) Value of Produce Sold & Consumed ... 91
Chapter VI Incomes and Profits 95–129
(1) Size of Farm 96
(2) Total Expenditure 100
(3) Labour Units 100
(4) Live-stock Units 100
(5) Crop Combinations 107
(6) Proportion of Irrigated Area 116
(7) Tenure 116
(8) Intensity of Cultivation 117
(9) Income from Live-stock Products ... 126
(10) Crop Productivity 126
Chapter VII Conclusion 130-131
Appendix 132
Bibliography 133-136

LIST OF TABLES

Table No. Page

1 Number of Farms relating to which data were obtaind 5
2 Distribution of the number of farms in the sample 5
3 Area and Population of the District, Taluka, Tract and Group 31
4 Area and Population of the 21 Villages from which the farms were selected 32
5 Acreage under Important Crops in the Tract Surveyed (1935–36) 34
6 Monthly Distribution of Rainfall at Wai ... 39
7 Harvest Prices in 1936–37 and 1937–38 41
8 Prices of Staple Food Grains 1930 to 1938 ... 42
9 Prices of Money Crops 1934 to 1938 43
10 Size of Farm Area operated (1937–38) ... 51
10–A „ „ „ (1936–37) ... 52
11 Distribution of Cultivated Area (1937–38) ... 54
11–A „ „ „ „ (1936–37) ... „
12 Investment (1937–38)... 58
12–A „ (1936–37)... 59
13 Livestock (Number) (1937–38)... 60
13–A „ „ (1936–37)... 61
14 Crop Combinations (1937–38)... 63
14–A „ „ (1936–37)... 64
15 Receipts from Livestock Products (1937–38) ... 68
15–A „ „ „ „ (1936–37) ... 70
16 Total Crop Receipts and Receipts from Important Crops ... (1937–38) 72
16–A „ „ „ (1936–37) 74
17 Total Farm Receipts (1937–38) 77
17–A „ „ „ (1936–37) 78
18 Farm Expenses (1937–38) 80
18–A „ „ (1936–37) 82
19 Summary Table (1937–38) 89
19–A „ „ (1936–37) 90
20 Manner of Disposal of Produce of Important Crops (1937–38) 92
21 Percentage of the value of the Produce of Important Crops to the total value of the Crop Produce sold, retained at home and Paid in Kind (1937–38) ..., ... 92

22 Size of Farm in Adjusted Acres—Farm Income (1937-38) 97

22-A " " " " " (1936-37) 98

23 " " " Net Profits (1937-38) 97

23-A " " " " " (1936-37) 98

24 Total Farm Expenditure—Farm Income (1937-38) 101

24-A " " " " " (1936-37) 102

25 " " " Net Profits (1937-38) 101

25-A " " " " " (1936--37) 102

26 Total Labour Units Utilised-Farm Income (1937-38) 103

26-A " " " " " (1936-37) 104

27 " " " Net Profits (1937-38) 103

27-A " " " " " (1936-37) 104

28 Total Livestock Units—Farm Income (1937-38) 105

28-A " " " " " (1936-37) 106

29 " " " Net Profits (1937-38) 105

29-A " " " " " (1936-37) 106

30 Crop Combinations—Farm Income (1937-38) 108

30-A " " " " (1936-37) 109

31 " " " Net Profits (1937-38) 108

31-A " " " " (1936-37) 109

32 Crop Combinations—Size of Farms (Adjusted Acres) (1937-38) 111

32-A Crop Combinations—Size of Farms (Adjusted Acres) (1936-37) 111

33 Percentage of Irrigated to total Adjusted Acreage —Farm Income (1937-38) 112

33-A Percentage of Irrigated to total Adjusted Acreage —Farm Income (1936-37) 113

34 Percentage of Irrigated to total Adjusted Acreage —Net Profits (1937-38) 112

34-A Percentage of Irrigated to total Adjusted Acreage —Net Profits (1936-37) 113

35 Percentage of Owned to total Adjusted Acreage —Farm Income (1937-38) 114

35-A Percentage of Owned to total Adjusted Acreage —Farm Income (1936-37) 115

36 Percentage of Owned to total Adjusted Acreage —Net Profits (1937-38) 114

36-A Percentage of Owned to total Adjusted Acreage —Net Profits (1936-37) 115

37 Percentage of Acreage on Crop-share Tenancy —Farm Income (1937-38)... 118

37-A Percentage of Acreage on Crop-share Tenancy —Farm Income (1936-37)... 119

38 Percentage of Acreage on Crop-share Tenancy —Net Profits (1937-38) 118

38-A Percentage of Acreage on Crop-share Tenancy —Net Profits (1936-37) 119

39 Cost of Labour Utilised per Adjusted Acre—Farm Income (1937-38)... 120

39-A Cost of Labour Utilised per Adjusted Acre—Farm Income (1936-37)... 121

40 Cost of Labour Utilised per Adjusted Acre—Net Profits (1937-38) 120

40-A Cost of Labour Utilised per Adjusted Acre—Net Profits (1936-37) 121

41 Manure Utilised per Adjusted Acre—Farm Income (1937-38)... 122

41-A Manure Utilised per Adjusted Acre—Farm Income (1936-37)... 123

42 Manure Utilised per Adjusted Acre—Net Profits (1937-38) 122

42-A Manure Utilised per Adjusted Acre—Net Profits (1936-37) 123

43 Live-stock Products per Adjusted Acre—Farm Income (1937-38)... 124

43-A Live-stock Products per Adjusted Acre—Farm Income (1936-37)... 125

44 Live-stock Products per Adjusted Acre—Net Profits (1937-38) 124

44-A Live-stock Products per Adjusted Acre—Net Profits (1936-37) 125

45 Crop Index—Farm Income (1937-38) 129

46 „ „ —Net Profits (1937-38) 129

SUMMARY

The scheme of research in agricultural economics, the report on whose results is appended herewith, was, in the main, a methodological project. Its objective was to find out whether the survey method of farm business studies was applicable to Indian conditions and if so, what adaptations would be rendered necessary by the peculiar circumstances of India. The special comparative advantages of the survey method have been described as " speed, cheapness and a much more comprehensive picture of the economic conditions of farming." The nature of the method and its special application to India are thus described in a note prepared by Mr. D. R.. Gadgil for the sub-committee which considered the application of the Institute for a grant-in-aid to this project.

" The Survey method seeks to do something entirely different from that attempted by the cost-accounting method. Cost-accounting goes into the minutest details regarding a few individual farmers and aims at the greatest measure of accuracy. The survey method, on the other hand, tries to cover as large a number of cases as possible and to present a general picture of the economy of a whole tract. Its aim further is not so much to determine the cost of production of a particular crop or the extent of the profitability of farming as to see why some make more profits or suffer less loss than others. By comparing a large number of farmers with one another the survey method tries to determine the factors that make for efficiency in farming. Further, it is necessary to obtain extensive data on which to lay the foundations of agricultural policy. The survey method is the only one which can produce such data. Just because the survey method finds out facts about the average farmer, the results yielded by it are of great utility in the work of extension and propaganda. It is generally agreed that the method has special possibilities 'under conditions of inadequate financial resources and an inadequate supply of even elementary data of a large number of individual farms.' It is thus a method whose application to Indian conditions would be of the greatest value in the investigation of India's agricultural economy. "

The report on the survey conducted by the Institute is divided into two parts. Part I deals with procedure and method. It describes, in the first instance, the steps taken to organize the work of the survey, the staff employed, its training, and the arrangements for supervision during the course of the field work (*p. 1*). Next a detailed account is given of how the sample of farmers whose businesses were studied, was selected. The various steps taken in making the choice of the sample were: (1) The choice of the tract (*p. 2*). The main considerations in this respect were homogeneity and its suitability from other points of view such as an adequate variety of crops, being typical of an important region, etc. (2) The choice of villages (*p. 3*): 23 out of the 39 villages included in the tract were selected for the survey, each of the omitted villages being usually one of a pair of similar contiguous villages. (3) Choice of farmers (*p. 4* and *5*). This was guided mainly by the need for covering only genuine cultivators, with a proper representation of businesses of varying sizes. The latter portion of this chapter dealing with method, begins with a discussion of the reliability of the data (*p. 6*). The chief defect in the Indian situation is the lack of notes and memoranda on the part of the farmers. Modifications and precautions are necessary chiefly to meet this peculiarity. The measures adopted by us to meet this difficulty were: an insistence on asking questions separately about each field, crop, animal unit or transaction; the preparation of a number of standardised lists of seed rates, crop yields, etc. to serve as checks; the preparation and use of itemised lists of crops, implements, labour operations, etc.(*p. 7*); the provision of a number of cross-checks in the schedules themselves; the use of village and other records for finding out discrepancies in the information supplied by the farmer. It is believed that with a proper application of all these measures the data collected in India would be as reliable as those collected in other countries. The net result of these modifications of method is that a survey in India would have to be spread over a somewhat longer period than is the case in other countries. It would not ordinarily be possible under Indian conditions to fill the entire survey schedule in one visit to the farmer; it is, therefore, suggested that surveys in India should be started a little before the end of financial year for which the data have to be collected (*p. 10*). The chapter ends with a series of detailed comparative notes on each of the forms (*p. 11* and *13*) included in the survey schedule, drawing attention to the adaptations and modifications and the reasons for them.

Chapter II with which Part II opens, gives a general description of the tract surveyed (*p. 29*). It contains information regarding the salient physical features, the area and population (*p. 31*), the soils, the chief crops grown (*p. 33*), the means of communication and the markets of the tract (*p. 35*). The following chapter, Chapter III (*p. 38*), deals with seasons and prices during the years 1936–37 and

1937-38. Detailed statistics regarding the amount of the rainfall at Wai and its distribution during the crop seasons are given for these two years and they are compared with the average figures for the preceding fifteen years (*p. 39*). Statistics, compiled from information collected by the fieldmen, are similarly given regarding average prices, ruling at harvest time, of all important crops grown in the tract for 1936-37 and 1937-38 (*p. 40*). Such information, as was available regarding prices ruling during earlier years is also given in this chapter. Chapter IV is confined to defining the technical terms used in the report (*p. 44*). These terms have been generally used in the same sense in which they are used in U. S. A. and Great Britain. There are, however, certain important modifications. These are: (i) Somewhat wider definitions of receipts and expenses both of which include items which are produced as well as consumed by the business itself. It is usual elsewhere to ignore these. (ii) The non-inclusion in the inventory of stocks of produce, manure, etc. on hand. (iii) The non-inclusion in the expenses, of the cost of unpaid labour not only of the operator but also of that of the members of his family.

The tract surveyed consists of 39 villages with a total area of 87,660 acres and a population in 1931 of 49,563. The villages from which farmers were selected have an area of 59,515 acres and their population in 1931 was 38,848 (*p. 31*). The number of farmers who owned at least one bullock (this was taken as the test of a cultivator's being a full-time farmer) in the selected villages was 3,216 (*p. 5*). Out of this number we completed survey schedules relating to 490 farmers for the year 1936-37 and 620 for the year 1937-38. The large majority of farmers covered during the first year was also included in the second year's sample. Of this group of farmers it was decided to exclude, for purposes of this report, farmers owning fruit orchards or betel vines. Chapters V and VI of the report deal with information relating to farmers, owning neither orchards nor betel vines. The two chapters aim chiefly at exemplifying the main uses to which information yielded by a survey can be put. Chapter V presents the data relating to the average farm business in the tract. The data are presented in a series of 22 tables in each of which the statistics are given separately for the sample of farmers taken from each village and also for the whole sample. The appropriate average and percentage calculations are included in the tables. The number of farmers in the sample in each village fluctuated ordinarily between 20 and 40, roughly in proportion to the size of the village. These tables give a comprehensive picture of the nature of farming of the average unit in the tract and also give an indication of the variations in conditions between village and village. The size of the farm (*p. 50*) is first considered. For 1937-38 the average area operated per farm was 12·5 acres of which 9·5 acres were under cultivation, 2·1 acres under pasture, 0·2 under fallow and 0·7 acre was permanent waste. Of the average farm area of 12·5 acres, 8·3 acres were owned and 4·2 acres were rented (*p.51*). Of the average cultivated area of 9·5 acres, 1·8 acres was on an average double-cropped (*p. 53*) thus giving the number of average crop acres as 11·3. Of the 11·3 crop acres 10·1 acres were dependent purely on rainfall for production; the remaining enjoyed certain irrigation facilities. The types of irrigation facilities are classified in four groups in the tables and details regarding areas under them given. From the point of view of acreage the order of importance of the crops in the tract was jowar, bajri, groundnut, gram, wheat, potatoes, peas and turmeric (*p. 56*). The variations revealed by the sample in each village are in some cases quite large. The value of the owned land of the average farmer came up very near to Rs. 2,500 (*p. 57*) and this formed 91 p.c. of his total investment in the business. The other important parts of his investment consisted of livestock and implements, which were evaluated at Rs. 125 and Rs. 52 respectively. Ownership of livestock (*p. 60*) in the tract was not considerable. The sample of farmers was chosen on the basis of bullock-owning. The average number of bullocks owned per farmer was 1·6. Buffalos, kept chiefly in villages which had some kind of market for milk nearby, averaged at 0·8 per farm business; the corresponding figures for cows, goats and sheep was, 0·6 for each. The average holding of poultry amounted only to 0·7 per farmer (*p. 62*).

Information is given separately (*p. 62*) about the types of crop combinations grown by the farmers. The dominant combination is jowar, bajri and groundnut. A large number of farmers grow some irrigated crops in addition to jowar, bajri and groundnut. A substantial number of farmers grow jowar, bajri and some irrigated crops but no groundnut. There are also many who grow nothing of importance besides jowar and bajri. In the irrigated villages are to be found a fair number of farmers whose receipts from turmeric alone or from turmeric and other irrigated crops come to over 40 p. c. of their total receipts from crop produce. The two sections after crop combinations deal with receipts from livestock products (*p. 66*) and from crops (*p. 67*). The total receipts from livestock products per farmer amounted to Rs. 60 during the year. Of this, however, only Rs. 16 represented livestock products sold. The rest represented products consumed by the operator's family or utilised in the farm business. Buffalo's milk was the only product to yield substantial receipts from sales.

The total of Rs. 60 was made up chiefly of Rs. 33·9 on account of milk, sold and consumed, and Rs. 22·6 on account of manure which was almost entirely consumed in the business. The crop receipts of the average farmer were valued at Rs. 317 for the year. Receipts from jowar, bajri and fodder make up 51 p. c. of this total. Groundnut, turmeric and potatoes contribute 15 p. c., 14 p. c. and 5 p. c. respectively to the total. In the group contributing between 5 p. c. and 2 p. c. are to be placed wheat, sugarcane, gram and the combined pulse group; and between 2 p. c. and 1 p. c. were black gram, coriander seed, onions, chillies and safflower. Of all these calculated crop receipts, receipts due to crop sales amounted to Rs. 78 only. Crop produce valued at Rs. 51 was paid out in kind, chiefly to landlords as share of the crop, to *balutedars* and to hired labour (*p. 76*). The rest was either utilised in the business, or consumed by the family or carried over as stock for future consumption or use. The total receipts of the average farmer during the year were valued at Rs. 411. Items other than receipts on account of crops and livestock, which composed this sum were income from other sources (*p. 79*), recoveries from landlords and net appreciation of livestock. They all represented small amounts.

The average expenditure per farmer for the year was calculated at Rs. 323 (*p. 79*). This did not not include any charge for interest on investment or any remuneration for the labour of the operator and his family. Of this total expenditure of Rs. 323, Rs. 27 and Rs. 44 represented payments on account of land revenue and on account of rent paid to landlords per farm respectively. The most considerable expenditure incurred, Rs. 94·7 per farm, was on feeding livestock (*p. 84*). Of this Rs. 61·3 represented price of home-grown fodder; the rest represented the price of feeding materials that had to be bought by the farmer. The expenditure on seeds and manure amounted on an average to Rs. 39·6 and 36·2 per farm(*p. 85*). In both these cases the value of home supply accounted for a little over two-thirds of the total expenditure. Hired labour cost the average farmer Rs. 31·6 during the year. The value of payments to *balutedars* (village functionaries and village artisans) amounted to Rs. 14·0 per farm and other miscellaneous expenditure amounted to Rs. 18·3. Net depreciation on livestock and the depreciation on implements, etc. was calculated at Rs. 6·7 (*p. 86*) and Rs. 10·6 (*p. 87*) respectively. Neglecting the two calculated items the total farm expenses during the year came to Rs. 305·7 of which Rs. 171·1 were met by utilising produce of the farm or by making payments in kind of the produce. Rs. 134·6 represented expenditure that was incurred in cash. If the value of home produce which was both produced and consumed within the business (fodder

Rs. 61·3, seeds and plants Rs. 27·0 and manure Rs. 25·6) total Rs. 113·9 (*p. 88*) is deducted from both sides the average receipts per farmer for the year amount to Rs. 297·6 and the average expenses to Rs. 209·1.

The number of labour units (*p. 91*) employed by the average business during the year was 1·3, of which only 0·3 represented hired labour. The farm income per farmer during the year amounted Rs. 88. But this allowed neither for interest on investment nor for wages of unpaid family labour. If interest is allowed at 3 p. c. per annum on the total capital investment and if the wage of family labour is calculated at Rs. 9 p. m. per adult worker the net result for the average farm business is a loss for the year of Rs. 99. Lastly data are presented regarding the values of the produce of each important crop which was sold, retained at home or paid out in kind (*p. 91*). These reveal the relative importance in the tract of various crops as cash crops and subsistence crops.

While Chapter V attempts to present a comprehensive picture of conditions of farm economy in the tract, Chapter VI attempts to find out the significance of the variations in the results of the operations of individual farmers. For this purpose the information relating to individual farmers is classified into a series of frequency tables. Two tests of the character of the results of the farm business are used in this chapter. They are, the size of the farm income and the extent of the net profit or loss made (*p. 96*). An attempt is made to correlate a number of possible factors affecting profitability with results as indicated by farm income or net profits. The total number of frequency tables given in the chapter is forty-eight. Examining an individual factor like size of farms in acres (*p. 96*) it is shown that farms below a certain size have a distinctly lower level of farm incomes and a less than average capacity to make profits ; that, as between a certain range of acreages, size does not seem to make any difference to incomes or profits ; that the largest farms make the highest incomes and profits but are also liable to the biggest losses (*p. 100*). In a similar manner other indexes of size, viz., total expenditure and total labour units employed, are examined in their relation to income and profits. The total number of livestock units owned is also examined in order to assess the importance of the size of livestock business. The extent to which the type of farming affects results is examined in relation to crop combinations (*p. 107*) and the proportion of irrigated land to the total farm area (*p. 116*). The former yields especially interesting results. The tenure aspect is dealt with from two points of view. Firstly, in respect of the proportion of owned area to the total farm area and secondly in respect of the two dominant systems of tenancy viz., cash renting and share renting. Intensity of farming is a factor that should presumably affect the results of the farm business (*p. 117*). In order to find out tentatively the extent of this effect, the data are tabulated in frequency tables showing the relation to income and profits of farm businesses classified according to the number of labour units used by them per acre and according to the per acre expenditure incurred on manure. An attempt is also made to evaluate the effect of the varying proportions in which livestock business may be combined with crop production. This is done by classifying farms according to their receipts from livestock in proportion to each acre of their farm area (*p. 126*) and then examining whether any of these classes are significantly related to incomes and profits. Finally, incomes and profits are examined in relation to the per acre production of crops in individual businesses measured by a specially devised Crop Index (*p. 126*). This reveals a definite association of higher incomes and profits with higher per acre yields of crops.

In conclusion it may be pointed out that the results of this investigation fully uphold the claims made on behalf of the survey method (*p. 130*). The expenditure on the project works out at a little over Rs. 15 per farm schedule filled in. This is distinctly cheap. The time taken was also short, especially if allowance is made for the fact that much greater time than the normal is required in any experimental and pioneering project. The data obtained present a comprehensive and a truly representative picture of the farm economy of a large tract and they make it possible to test in a variety of ways the factors that make for profitability or lack of it in farm business in the tract.

PART I

CHAPTER I

PROCEDURE AND METHOD

1. Preliminary

The Gokhale Institute of Politics and Economics had been at work on this project, namely, the application of the survey method to farm business studies in India, since 1934. After a careful study of the survey schedule forms used in other countries, preliminary work in this connection was carried out in the Khed Taluka of the Poona District. This work was finished towards the end of 1934 and it was then found possible to prepare a schedule of forms suited to Indian conditions. During 1935-36 we worked on this schedule and carried out a small survey in a village—Bhade (Bhor State)—on the borders of Wai Taluka (Satara District). On the completion of this work we felt confident of the results; but it was necessary that they should be demonstrated by carrying out a survey over a large area. We were enabled to do this by a grant-in-aid to the project received from the Imperial Council of Agricultural Research. Work on this survey was begun in about March 1937 and the report on the survey was presented to the Council in October 1939. The survey was carried out directly under the supervision of Mr. V. R. Gadgil by the agency of five fieldmen with the addition of occasional local help.

The first task with which we were confronted in this survey was the selection and training of fieldmen. We attempted as far as possible to recruit fieldmen who had acquaintance with local conditions and who came from an agricultural family. The minimum educational qualification laid down was the passing of the Vernacular Final Examination. Of the five fieldmen finally selected, one had worked on the investigation into the cost of production of sugarcane and cotton conducted by the Imperial Council of Agricultural Research and another had training in an agricultural bias school. In one village we tried the experiment of collecting the data through a literate farmer. After selection, all the fieldmen were trained for over one month by Mr. V. R. Gadgil. They were trained in the use of village records and the survey schedules were filled

After preliminary work the number of villages finally selected was 23. The area covered by these 23 villages is about 93 square miles i.e. about 69 per cent. of the area of the entire tract of 39 villages.

(C) *The Farmers*—Having determined the number of villages in which work was to be conducted, the next step was to choose the farmers. Before doing this it was necessary to ascertain their number and prepare a list of them. For this purpose we had recourse to form No. 15 of the village records; and we started with the assumption that a holder or tenant who did not possess a bullock need not be considered a farmer for purposes of our survey. This assumption, though it may involve a few errors of inclusion and exclusion, is substantially correct for this tract. After preparing in this manner lists of agriculturists who were owners of at least one working bullock, we next fixed the quota of farmers to be covered in each village. This quota was roughly proportionate to the number of agriculturists in our list in each village. Limitations of a maximum and a minimum were, however, laid down. In no case did the number of farmers exceed 41 except Wai which now includes two adjacent villagas, namely, Songirwadi and Sidhanathwadi recently incorporated within its municipal limits.[1] Further, in no case did the number of farmers covered fall below 18[2]. In determining as to how the quota for each village should be made up, an important criterion was observed. In the absence of any direct information, available in the village records, regarding the size of the cultivators' operations, we had to depend on bullock-owning as a criterion not only of a person's being a cultivator but also of his scale of operations. We divided the farmers in our list into categories of those owning one bullock, owning two bullocks and so on. And each of these categories was appropriately represented in the sample. After this stage the choice of actual individuals was guided largely by considerations of practicability and convenience. No random sample method could be followed in this case. The chief considerations that determined the choice were the willingness of the farmer to give us information and the intelligence displayed by him in answering the questions put to him by the fieldmen. This procedure, however, was not likely to introduce any such bias in the sample as would detract from its representative character.

The following table shows the total number of farmers covered by us in the two years of the survey and the extent to which they were common to the two years.

---

[1] Since the two villages have been incorporated into Wai, the total number of villages, viz. 23, has now been reduced to 21; this will be the number referred to hereafter in this report.

[2] The original intention was that in no case should this number fall below 20. This intention could not be fulfilled in a few cases because of schedules that could not be completed or had to be cancelled.

TABLE No.1[1] Number of farms relating to which data were obtained

Years	For one Year only	Common to both Years	Total
1936-37	23	467	490
1937-38	153	467	620
Total number of schedules filled			1,110

For purposes of this publication we have excluded all farmers in whose farms fruit orchards were included. This was done because of the many difficulties involved in properly allocating the receipts and expenditure items in respect of a fruit orchard for any particular year. The following table gives the number of farmers in our sample in each village, showing separately those who owned fruit orchards.

TABLE No. 2 Distribution of the number of farms in the sample

Villages	Farms covered in the year 1936-37				Farms covered in the year 1937-38		
	Total No. of owners of bullocks	Without orchards or betel vines	With orchards or betel vines	Total	Without orchards or betel vines	With orchards or betel vines	Total
1 Asla	148	22	0	22	23	1	24
2 Bavdhan	313	18	9	27	31	9	40
3 Bhuinj	410	29	5	34	27	5	32
4 Bopardi	74	24	0	24	25	0	25
5 Chandak	115	18	0	18	25	0	25
6 Dehgaon	109	17	2	19	19	2	21
7 Gulumb	153	22	2	24	26	3	29
8 Kalangwadi	34	21	0	21	21	0	21
9 Kavtha	186	10	1	11	35	1	36
10 Kenjal	187	25	0	25	34	0	.4
11 Kikli	214	10	1	11	36	2	38
12 Lohara	72	14	4	18	15	8	23
13 Menavli	66	20	0	20	23	0	23
14 Ojharda	146	18	1	19	32	1	33
15 Panda	58	15	2	17	17	1	18
16 Panchwad	113	23	0	23	23	1	24
17 Pasarni	158	36	2	38	39	2	41
18 Surul	144	28	1	29	27	1	28
19 Udtara	114	17	1	18	22	4	26
20 Virmada	49	13	1	14	22	1	23
21 Wai (including Songirvadi and Sidhanathvadi) ...	353	38	20	58	35	21	56
Total ...	3,216	438	52	490	557	63	620

---

[1] The total number of farmers who were approached for information during either one year or both the years was 681. But in a number of instances the schedules could either not be completely filled or had to be discarded for some reason or other. The net figures of schedules which were finally approved and tabulated were as shown in the table above.

3 Reliability of Data

It is not necessary for us to say anything about the standards of accuracy aimed at and attained by the survey method. The question has been discussed adequately in previous publications relating to farm management surveys in other countries.[1] We are specifically concerned with the peculiarities of Indian conditions and the effect they would have on the accuracy of our data. The main peculiarity is that while in other countries the survey investigator obtains substantial help from notes[2] and memoranda kept by the farmer, such notes or memoranda are virtually absent in this tract. The number of literate farmers is small and even those who are literate do not keep any kind of even rough accounts. We had, therefore, to rely almost entirely on what the farmer remembered regarding his past operations. We did not find this to be a considerable handicap ; for, the farmer is usually able to recapitulate quite clearly the details of his dealings and his operations. To ensure accuracy under these conditions it was, however, necessary to enter into much greater detail than would be necessary where a farmer kept any notes or memoranda. We split our questions into as many separate individual items as possible and avoided, as far as possible, questions which would involve any mental calculation or estimation on the part of the farmer. The farmer remembers the individual item but gets confused when he has to deal with a number of separate items in one calculation.[1] It is also necessary to bring to his mind all the possible different items. A series of itemised lists were, therefore, added to our survey schedule. The most important of such lists were the lists of farm implements, of crops grown, and of different operations in connection with each crop on which hired labour may be employed. The fieldmen were instructed not to pass over a head until they had asked questions about each item in the list. Thus the fieldman, in collecting information about crops grown, read out to each farmer the entire itemised list of crops so as to ensure against the omission of acreage under any particular crop. A similar use was made of all the other lists. Like considerations led us to adopt the method of asking information from each farmer, not about the whole of his arable land or his livestock business but about each field and each animal unit. Fragmentation being considerable in the tract, this meant additional work but it was absolutely necessary to ensure accuracy. Thus we got information about items like crop acreages and yields separately field by field. It was, of course, sometimes necessary to modify this method, as when a particular crop from a number of fields was threshed on the same threshing-floor at the same time. In such a case these fields would be put together for the purpose of this information, as it would have been useless and unreal to try to allocate the yield between the different fields.

---

[1] E. g. :—

(1) Warren G. F.—' Agricultural Surveys '. Cornell University Bul. 344 (1914) pp. 424–26.

(2) Spillman W. J.—' Validity of the Survey Method of Research '. (1917) U. S. D. A. Bul. 529, pp. 7–15.

(3) Work of the Agri. Eco. Research Institute, Oxford, 1926, pp. 8–10.

(4) Bridges A.—' Survey Method as an Approach to the Study of Agricultural Economics '. (Paper read at a conference of the Agri. Eco. Society, Oxford, 1928).

(5) Maxton J. P.—' Survey Method of Research in Farm Economics'. E. M. B. 14 (1929) pp. 8–12.

(6) Currie J. R. and Long W. H.— ' An Agricultural Survey in South Devon '. Report No. 1 (1929), pp. 3–4.

(7) Buck J. L.—'Chinese Farm Economy.' (1930), pp. 1–4.

(8) Carslaw R. McG.—' An Economic Survey of Hertfordshire Agriculture '. Report No. 18, (1931) pp. 14–17.

(9) Carslaw R. Mc G. Menzies-Kitchin A. W. and Graves P. E.—' An Economic Survey of Agriculture in the Eastern Counties of England '. Report No. 19 (1932), pp. 5–7.

(10) Warren S. W.—' An Economic Study of Agriculture in Northern Livingston County, New York '. Cornell University Bul. 539 (1932), pp. 9-11.

(11) Orwin C. S.—' Methods of Research in Agricultural Economics Agricultural Economics Research Institute, Oxford.

[2] " Where the farmer himself kept accounts or other records these were referred to where available, but much of the data could only be obtained by relying on the farmer's memory and personal knowledge of his business organisation. 27% of the farmers providing data kept financial records, while many more had records of their labour costs, purchased foods, etc. ". ' An Economic Survey of Hertfordshire Agriculture'. Cambridge University Report No. 18 (Footnote on page 14).

Another device that we employed to ensure accuracy was the preparation of a set of standard tables in respect of a number of items. The chief of these items were seed rates, crop yields and the labour requirements of each crop. These standard tables were compiled for each village or a small group of villages in consultation with a number of prominent cultivators, usually in a group discussion. The standards were used chiefly to check the information supplied by farmers. It should, however, be made clear that no figure supplied by a farmer was changed because of even a large variation from the standard and the fieldman was asked not to suggest, in any case, any figure of yield etc. to the farmer. When large variations from the standard were found, the fact was brought to the notice of the farmer and his explanation was asked. A modification of the information originally supplied was effected only if the farmer thought, after discussion, that the figure should be modified. The chief result of this was not so much a modification of the figures as getting explanations about the range of variations.

---

[1] Cf."Rather than ask the farmer what his total expenses for the year were, it was found better to ask him concerning each item of expense. As a rule, farmers do not know their total expenses, but they do remember quite clearly what they pay for labour, seed, fertilizer, and the like."—'Chinese Farm Economy'. By J. L. Buck, p. 2.

We also attempted to provide a number of cross-checks in the schedules themselves. Thus we asked each farmer the fodder requirements of his livestock month by month and then tallied this information with the figure of total fodder consumption for the year, which was obtained from other tables. The information regarding total manure used could be checked by calculations from information regarding total manure produced, sold and purchased. For the same purpose we obtained a double set of returns regarding livestock units and livestock products. One was a group record and the other a detailed per animal record. The two provided a useful check on each other and the total. There is little doubt that it is much more difficult to obtain correct information regarding small items of frequent receipts like milk, eggs, vegetables than about crop yields.[1] Milk yields being an important item of receipt, we tried to obtain accurate figures by using a number of cross-checks. The number of months of milk-yield of any animal during the year could be checked by the reported ages of calves. There were also standard lists prepared regarding the progressive variations in the yield of milk month by month.

We believe that as a result of the greater number of visits paid by our fieldmen and the devices, described above, used by us to ensure accuracy, the absence of notes or memoranda did not affect

---

1. Cf. "Milk receipts are difficult to estimate because they are distributed unevenly throughout the year. Receipts from crops are likely to be remembered exactly. Most farmers remember the exact amount of grain recovered at thrashing time, and know very closely how much they sold, and the price received per bushel. Many expense items such as taxes (and rent) come in large sums all at once and are remembered...... The items which the farmer is least able to estimate accurately are those like milk which are spread over the entire year." —'An Economic Study of Agriculture in N. Livingston County, New York.' (1931), Bulletin 539, p. 10.

the results of our inquiry; and there seems to us no ground for holding that the results of the use of the survey method applied in the manner we did, would be materially less accurate than the results of survey investigations conducted in other countries.

4. Modifications Adopted and Suggested

What has been said so far will make it clear that while, in our opinion, the results yielded by the survey method in India are reliable, it is necessary to observe certain precautions and make certain modifications in its application. Even with these modifications the survey method will retain its qualities of comprehensiveness, cheapness and expeditiousness. It would not have been possible by any other method to obtain anything like the volume of representative data yielded by our present investigation, as quickly and as cheaply. The survey method may thus be taken as being definitely applicable to Indian conditions. Our investigation was mainly undertaken to establish this possibility and to find out the lines of adaptation. We now proceed to consider in some detail the modifications necessary in the application of the survey method to India.

The most important modification that we made and that we feel to be necessary, is that of spreading out the time during which the survey is carried out and of increasing the number of visits paid to the farmer by the investigator. We have nowhere seen a detailed account of the procedure followed in the survey investigations in U. S. A. or Great Britain. From statements contained in the reports of farm management surveys it would appear that the investigation is usually conducted at the close of the agricultural year. In some cases a questionnaire or schedule is sent out in advance and the investigators visit those farmers in a tract who have promised co-operation. Ordinarily no such preliminary step is taken. The investigators visit farmers and get the entire schedule filled in, in usually one visit to each farmer. Accounts and records are utilised for this purpose wherever they are available. It would seem that the work of collecting the data is completed in three to six months' time, depending on the number of farms covered and the number of investigators.[1] It is our experience that under Indian conditions the work cannot be satisfactorily carried out equally quickly. The main reason for this is that, in the absence of any notes etc. kept by the farmer, it becomes necessary to adopt many devices to ensure accuracy, all of which increase the labour involved in filling the schedules. This question has already been dealt with above and the details of the necessary changes made in the schedules are indicated later. Secondly, we found that the large number of separate strips of land cultivated by each farmer and the variety in ownership and tenure rights increased the burden of the work very largely. It was essential for our purpose to get the exact details of the whole area cultivated by the farmer. For a variety of reasons there are likely to be gaps in the information, on this score, supplied by the farmer. The village record should then be used as a check; but the village record is itself many a time not wholly accurate, nor always up-to-date. Hence the need for going to and fro and getting information verified and discrepancies cleared. All this takes up a great deal of time at one or the other stage of the enquiry. The net result is that an investigator cannot ordinarily fill in the whole schedule in one visit.

---

[1] Vide "An Economic Survey of Agriculture in the Eastern Counties of England." Report Nos. 19 and 22 of the Farm Economics Branch of the University of Cambridge.

The details of the actual way in which the two years' work was carried out would be interesting. For the purpose of the survey we fixed the financial year as from 1st July to 30th June. The work on the survey schedules for the year 1936-37 was begun in May 1937. The field staff consisted of five investigators and some local help. The schedules for 1936-37 were almost completely filled in towards the end of October 1937. The total number of schedules filled was 490. It should, however, be noted that reference to the village records was, in a large number of instances, made after this period and also that all the itemised lists were not fully used in this year's survey. The work on the 1937-38 schedules was begun in November 1937 and was finished by October 1938. The total number of schedules filled was 620. Work preparatory to tabulation revealed some gaps and the fieldmen had to be sent back to their villages for getting these filled. All this work took us on to almost December, 1938. It has to be remembered that the period of more than a year taken over the 1937-38 schedules could have been shortened if we had started on that work much later in the year. As our year did not end till 30th June, at least one visit had necessarily to be paid to each farmer after that date. The result of this experience may be summarised thus. Under our conditions a survey involves at least two visits to each farmer and a certain amount of work with the village records. In these circumstances it would be a convenience not to wait till the end of the financial year for beginning the survey, but to start it a few months before the close of the year. So that one visit to each farmer is paid before the end of the year and the second visit subsequent to its close. With the same staff the time required for the survey would thus be roughly double that required in the U. S. A. and England. Even so the method would retain its overwhelming utility as yielding representative data cheaply and expeditiously.

5. The Modified Schedules

We now proceed to indicate in detail the modifications made by us in the survey schedule usually used elsewhere. Most of the reasons leading us to make the modifications have already been indicated above. We indicate the nature of the modifications by means of a series of notes on each individual form contained in the schedule. Before doing this, we desire to draw attention to certain accounting practices or definitions in which we have found it necessary to deviate from the standard American or English practice.

(i) It is usual to ignore certain items for purposes of survey accounts. These items represent products which are produced by and consumed in the business itself. Thus fodder and manure produced by the farm business and utilised within it are not usually counted either on the receipts or the expenditure side. We have, however, departed from this practice and counted, as far as possible, all such items both on the expenditure and on the receipts side. It was necessary for us to do this as it was the only way in which we could make sure of getting accurate and exhaustive information and of being able to check it. If we had contented ourselves with noting the quantities of seed, manure, fodder, etc. which were bought or sold, we could not have checked these figures by our standard lists of production or consumption or by such indirect measures as the requirements of individual fields or units of livestock. Further, we consider that our method of accounting brings out much better the detailed working of our more self-contained agricultural economy than the standard American and English method would do. It is obvious that the net result is not affected by the change. The entries cancel each other and the chief effect is merely that of showing the volume of both receipts and expenditure as somewhat larger than under the other procedure.

(ii) For much the same reasons as above we have counted as receipts all private drawings in kind by the farmer or his household. These are ordinarily neglected in U. S. A. and England. We, however, held that where farming was so largely of the character of subsistence farming it would not be proper to neglect them. Neglecting them would also have made difficult the checking of total yields.

Private drawings in kind have been neglected by us only when they were insignificant in value and could not be easily ascertained as in the case of the family consumption of greens or green corn.

(iii) We did not also note any balance on hand of the last year's produce except fodder, in the inventory at the beginning of the year. We completed the accounts in this respect for each year by crediting to the receipts side of the farm business account of the year all unsold produce valued at prices ruling at the time of the harvest. We were induced to do this because of two reasons. In the first instance, when an inventory is taken many months after the end of the year the farmer is not usually in a position to give an accurate idea of his stocks of grain etc. of many months ago. In the second instance, the grain stored out of last year's harvest which still remains on hand on July 1 is, practically all, in the nature of stock for family consumption. Very small stocks of a money crop to be sold are carried over by the farmer at so late a date after harvest, as July 1st. Neither of these reasons apply, however, to stocks of fodder. It is absolutely essential to the farmer's livestock economy to carry over a sufficient stock of fodder till the new supplies begin to come in; he also remembers the volume of his fodder stocks much more accurately than those of his stocks of grain. It should be clear, however, that though we noted the fodder supplies in the inventories, no difference in accounting practice was made in the treatment given to them and to grain or other produce. In both cases all receipts and expenditure during the year were completely accounted for in that year, the fodder in the inventory at the beginning of the year being reckoned as a purchase.

(iv) We have also departed from the American and English practice regarding the valuation of family labour. It is usual to exclude from the expenditure side unpaid wages only of the operator i. e. the farmer. A debit entry is made for the value of the unpaid labour of the other members of the operator's family. We presume that this difference in the treatment of the unpaid labour of the farmer and that of his family is due to the supposition that the proper unit necessary and available for the business is the labour of the operator only and that the other members of the family work voluntarily on the farm. It is, in such a case, presumed that it is equally possible for the other members of the family to seek and obtain employment elsewhere. In India, however, the farm business must be considered, as a rule, the business of the family rather than of the operator as such. The chances of alternative employment are also comparatively scarce. We have, therefore, put together the unpaid labour of all the members of the farmer's family and excluded the whole of it from the expenditure side of the account.

(v) Attention may also be drawn to certain important points of detail. We have not included in the total investment any such item as the usual " cash to run the farm." It is impossible under our conditions to make any estimate of such an item and its size would also ordinarily be so small as not to affect materially the volume of "total investment." We have also excluded the dwelling house of the farmer from the " total investment." Farmers in this tract almost universally live on village-sites and not on their farm. The dwelling house, therefore, forms no part of the farm business. We have, however, included in the total investment the value of barns, stables, etc. attached to the dwelling house which may be utilised in the business of the farm. In valuing lands we have not followed any single criterion such as the land revenue assessment. A detailed enquiry was conducted into the sale records of recent years and on the basis of this a standard list of prices of land according to their grades in each of the two classes—dry and irrigated—was prepared. Each field was then put into its proper grade and valuation was made on the basis of the table of standard prices.

6. Notes on Individual Schedule Forms

Form I A—This gives a summary regarding the utilization, during the financial year, of the area operated. It is practically the same as the summary form used in other countries.

Form I B—This gives the details of the area operated. Before filling this form, three preparatory forms (see p. 25) had to be used which were as under :—

(1) The first one was used for making a list of the pieces of land, owned and rented, according to the information supplied orally by the farmer. This form included the local names of fields, the approximate area, details regarding ownership of land and the extent to which the area was irrigated, the source of irrigation, the land revenue and rent paid, and the terms regarding crop-share tenancy.

(2) The second form was used for copying the data from the village form VIII–A which is a register of proprietary holdings in a village and gives a list of all the pieces of land owned by individual holders (*khatedars.*)

FORMS IN THE SURVEY SCHEDULE

Form I—A

Date...............

Village____________________ Farm No.__________

For year beginning____________________ending________________

Operator__________________________ Age________________

P. O. Address______________________________________

Location____

*Distribution of Farm Area

Acres possessed { Owned____________________________
{ On mortgage____________________________

Acres cash rented__________________________________

Acres share rented_________________________________

Total________________

Acres operated_____________________________________

Acres in crops______________________________________

Acres in land lying fallow___________________________

Acres in permanent pasture__________________________

Acres in waste land, roads, buildings, wells, etc.______________

---

* This summary form may be filled after Forms 1-B, 1-C and 1-D are filled in.

Form I—B

Details of Area Operated

Date..............

Survey No., Division No., Sub-division No.	Name of the field if any	Area	Owned or rented	Agricultural assessment.	Judi, special or non-agricultural assessment	Local fund cess	Consolidated land revenue	AREA OPERATED								Terms with regard to rent		Remarks
								CULTIVABLE LAND						Pot-Kharab (Un-assessed waste)	Total area operated	In cash	In kind	
								Dry crop land	Irrigated		Rice-land	Other kinds	Total					
		A.	G.						By well	By canal or channel								
1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

Form I—C

Details about Utilization of Area Operated

Date..............

Survey No. Division No., Sub-division No.	Name of the field	Area	Cultivated				Uncultivated								Total area operated	Remarks
			Cropped once or twice	Dry	Irrigated	Total	Fallow during the year	Under permanent pasture			Pot-Kharab (Unassessed waste)	Under woods, wells, waste, etc.	Total		
								Good grazing	Rough grazing	Total					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Form II

Real Estate and Implements

Date..............

Items	Year when bought or built	Original	Value at the beginning of the year	Value of improvements made during the year	Value of property sold during the year	Value at the end of year	Depreciation charges		Repair expenses		Remarks
							Probable life hereafter	Deprecia. to be charged for the current year	During the year	Normal	
1	2	3	4	5	6	7	8	9	10	11	12

Note—Column No. 1 in the above form carries vertically the following items:—(1) Stables, (2) wells, (3) fencing, (4) embankments (or bunds) and (5) implements.

Form III—A

Baluta-dues and Charities Paid During Year

Date..............

Kind of crop	Carpenter	Iron-smith	Shoe-maker	Mang	Mahar	Watchman	Potter	Washerman	Barber	Butcher	Koli	Gurav	Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Form III—B

EXPENSES O SEEDS PL TS

cro

o.
b-
o.
l

Owned,
share-
rented
or cash-
rented

To
qua
of se
nun
of p

Operator's shar

andlord's sha

Rema

Quan

whe
purch

ice

Va

alu

3 8 1 3

Crop eld Disposal

Date

Survey No.	Division and Sub-Division No	Local name	Season	Name of the crop	Area	Name of the previous crop	Irrigated or dry	Owned, share-rented or cash-rented	Mixture of other crops	Total yield	Landlord's Share			Operator's Sales			Balance			Remarks
											Quan-tity	Price	Value	Quan-tity	Price	Value	Quan-tity	Price	Value	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Note—If a second crop is grown on any of the fields during the year, the acreage should be bracketed to avoid confusion in adding the acres in crops. The 'Total Yield' in column 11 represents not the actual total yield, but the quantity remaining after payment (in kind) to Balutedars and hired labour is made.

Form IV—A

Inventory of Live-Stock (Group Record)

Date……………

1	2			3			4			5			6			7			8			9
Kind of live-stock	Beginning of the year			End of the year			Purchased during the year			Sold during the year			Born during the year			Died during the year			Family use			Remarks
	No.	Price	Value	No.	Price	Value	No.	Price	Value	No.	Price	Value	No.	Price	Value	No.	Price	Value	No.	Price	Value	

Note—Column No. 1 carries vertically a detailed list of different kinds of live-stock such as the following:—(1) bullocks (working), (2) bullocks (maimed or old), (3) he-buffaloes (working), (4) he-buffaloes (maimed or old), (5) cows, (6) buffaloes, (7) breeding bulls, (8) breeding-buffalo-bulls, (9) immature bulls, (10) immature buffalo-bulls, (11) heifers, (12) buffallo-heifers, (13) calves, (14) buffalo-calves, (15) she-goats, (16) he-goats, (17) kids, (18) sheep, (19) rams, (20) lambs, (21) hens, (22) cocks, (23) pullets (24) roosters, etc.

Form IV—B

Inventory of Live-Stock (Detailed Record)

Date……………

Kind of live-stock	Breed	Age	Year and month when purchased	Original Cost	Age since commencement of farm-work, milk or eggs	Month since commencement of milk or eggs during the year	Value at the beginning of the year	Value at the end of the year	Increase or decrease during the year	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note—Column No. 1 carries vertically a list of all the individual animals of each kind one by one; *e. g.* buffalo No. 1, buffalo No. 2, buffalo No. 3, and so on (except in the case of sheep, goats, and poultry, however, which are dealt with in flocks).

Form IV—C

Live-Stock Products

Date..............

Kind of product	Kind of livestock that yielded the product	No. of livestock	MONTHLY PRODUCTION												Total production	Sold			Family use			Remarks
			July	August	September	October	November	December	January	February	March	April	May	June		Quantity	Price	Value	Quantity	Price	Value	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

Note—Column No. 1 carries vertically a list of items such as milk, butter, ghee, eggs, wool, hides, breeding fees, farm yard manure, etc., to be recorded for each animal separately and by flocks in the case of sheep, poultry, etc.

Form IV—D

Live-Stock Summary

Date..............

Item	Bullocks and buffaloes	Cows and She-buffaloes	Unproductive old and dry animals	Breeding bulls and buffalo-bulls	Immature animals (bulls, buffaloes, heifers & calves)	Sheep and Goats	Hens	Others	Total	Remarks
1	2	3	4	5	6	7	8	9	10	11
Livestock products ...										
Livestock sold ...										
Value of livestock at the end of the year ...										
Total ...										
Livestock purchased ...										
Value of livestock at the beginning of the year ...										
Total ...										
Net increase or Net decrease ...										

Form V

Inventory of Implements, Tools and Other Equipment

Date..............

1 Items	2 No.	3 Year bought	4 Original cost	5 Value at the beginning of the year	6 Value of purchases during the year	7 Value of implements or machinery sold during the year	8 Value at the end of the year	9 Depreciation charges		10 Value of repairs made during the year	11 Remarks
								No. of years it will last hereafter	Amount for current year		

Note:—Column No. 1. carries vertically a detailed list of all kinds of implements and tools used in the tract, one by one.

Form VI

Date............

Other Sources of Income

1 Items	2 Total Receipts			3 Family use		4 Remarks
	Quantity	Rate	Value	Quantity	Value	

Note—Column No. 1 carries vertically a list of items such as the following:—(1) Wages received for work done outside by family members, (2) wages for team-work or carting, (3) rent for implements or other farm equipment, (4) rent for water-rights, fields or pastures partly let out, (5) income for the year from fuel, fruit, etc. from permanent trees, (6) receipts from landlord for seed, manure, etc. as per terms of the lease; and such other sources of income.

Form VII—A

Date............

Feed Purchased during the Year

1 Items	2 Amount	3 Price	4 Value	5 Total	6 Remarks

Note—Column No. 1 carries vertically the names of different kinds of feeding stuffs, one by one, such as oilcake cotton-seed, bran, grain, jowar-stalks, bajri-stalks, straw, etc.

Form VII—B Date...........

Record of Estimated Monthly Consumption of Feed etc.

1	2												3	4	5	6
Kind of feed	July	August	September	October	November	December	January	February	March	April	May	June	Total quantity	Price per unit	Value	Remarks

Note—Column No. 1 same as in Form No. VII-A.

Form VII—C Date...........

Inventory of Feed, etc.

1	2			3			4
Items	Beginning of Farm Year			End of Farm Year			Remarks
	Quantity	Price per unit	Value	Quantity	Price per unit	Value	

Note—Column No. 1 same as in Form VII-A.

Form VIII—A Date...........

Fertilizers and Manure used

Kind of Fertilizer or Manure	Description	Operator's share			Landlord's share			Total	Remarks
		Amount	Price per unit	Value	Amount	Price per unit	Value		
1	2	3	4	5	6	7	8	9	10

Form VIII—B Date.....

Record of Casual Hired Labour (human & animal)

1 Item to which the labour is to be charged	2 Description of work done and calculation of wages paid for it	3 Payment in kind			4 Payment in cash	5 Remarks
		Quantity	Price per unit	Value		

Form VIII—C Date.

Cost of Packing, Transport and Marketing

1 Items	2 Packing (Rs.)	3 Transport (Rs.)	4 Marketing (Rs.)	5 Total (Rs.)	6 Remarks

Form VIII—D Date.

Summary of Current Expenses

Items 1	Operator's share 2	Landlord's share 3	Total Farm expenses 4	Remarks 5

ote—Column No. 1 carries vertically a list of items such as the following:—

(1) Payment in kind to Balutedars,
(2) Hired Labour: (A) Farm servants (engaged on period contract,); (B) Casual Labour : (a) Day labour, (b) Contract labour; (C) Board of hired labour other than what may have been included in any of the above items; (D) Feasts for occasional farm work.
(3) Repairs : (a) to implements and tools, (b) to stables, (c) to fencing, (d) to wells, (e) to bunds, etc., (f) to water-channels.
(4) Expenses on account of livestock : (a) fodder, (b) concentrates, (c) pasturage, (d) veterinary help, medicine, etc., (e) breeding fees, (f) poultry feed, (g) maintenance of watch-dog.
(5) Seeds and plants.
(6) Manure and fertilizers.
(7) Spraying : (a) materials, (b) labour.
(8) Accessories of implements.
(9) Rent paid for implements and other farm equipment.
(10) Oil for lamps, etc.
(11) Storage.
(12) Cost of packing, transport and marketing.
(13) Taxes : (a) land revenue, Judi, (b) local fund cess, (c) water rate (for government canal)
(14) Rent for land : (a) in cash, (b) in kind (*i. e.* crop share).
(15) Miscellaneous items.

Form IX—A Date...........

General Notes about the Operator and his Family

(A) Previous experience of agricultural work.

(B) Business of farming, whether hereditary.

(C) Size of farm in the year when the operator commenced his business.

Form IX—B Date.

Record of Family Labour

Family members 1	Age 2	Education 3	Months of work contributed to the farm 4	Nature of work done 5	Rate of wages at which similar labour could be hired 6	Remarks 7

Form IX—C Date.

Members of Family working outside the Farm

1 Serial No.	2 Relation to the operator	3 Age	4 Place of work	5 Nature of work done	6 Extent of cash supplied to the operator	7 Remarks

(3) The third preparatory form was used for noting pertinent data from the village form VII—XII. This village form is a combined index of lands, tenants and crops. It gives detailed information about each survey number and its division or subdivision, showing whether it is cultivated by the owner himself or is rented out to someone else. It also gives details about the terms of tenancy and the crops grown.

As pointed out above, the information contained in both these village forms is not always accurate or up-to-date. Hence it was necessary for us to check and tally the information obtained from these different sources before filling the schedule form I–B. So far as we are aware, conditions in this respect are much simpler in countries like U. S. A. and Great Britain.

Form I–C :—This form in the schedule is meant for finding out how the operator utilized each of the pieces of land that had been recorded in the previous form (Form I–B) i. e. whether it was cultivated or allowed to remain fallow; whether it was irrigated; if irrigated, for how many months during the year it received irrigation; and which of the pieces of land were used as permanent pasture. This form does not differ much from the form used in U. S. A. or Great Britain.

Form II :—This form is meant for recording the inventories and the improvements of real estate, machinery and implements on the farm. The modification made by us in the scope of the term 'buildings' and the method followed in evaluating land have already been indicated above. It may be pointed out that though we noted wells, embankments, etc. for the purpose of the inventory, we did not evaluate them separately. Wells, embankments, irrigation channel rights etc. enhance correspondingly the value of land. Instead, therefore, of evaluating the land and the irrigation equipment or right separately we thought it more convenient and logical to put an inclusive price on the field itself.

Miscellaneous standing trees, not forming part of a regular orchard or plantation, were neither inventoried nor evaluated, although their income was noted and included in the total farm receipts for the year. The reason for doing this was that the total value of the field normally includes the value of such miscellaneous trees and the produce obtained from trees is in lieu of some crop or produce foregone. Had there been no trees in those portions of the farm area which were covered by them, some crop could have been grown on it. In the absence of any crop, the income derived

PREPARATORY FORM No. 1

Local Name of the field		Survey No., Division and Sub-Division No.	Area (Assessed)		Area of unassessed waste (Pot-Kharab)	Assessment			Whether owned or rented	Details regarding rent or terms of share tenancy	Remarks
As given by the farmer	As found in the village records		Acres	Gunthas		Rs.	As.	P.			

PREPARATORY FORM No. 2.

(based on Village Form VIII—A)

Khata (Holding) No.............................. Name of the holder..

Survey No. Division No. and Sub-Division No.	Area		Local name of the field	Assessment or Judi	Local Fund	Consolidated land revenue	Remarks
	Acres	Gunthas					

PREPARATORY FORM No. 3

[based on Village Form VII-XII. (combined)]

Survey No. Division No., and Sub-Division No.	Local name of the field	Area			Government dues			Terms of Tenancy			Name of the Occupant of Khalsa land and holder of alienated land	Record of Rights No.	Other rights or encumbrances, and holders thereof	Remarks
		Cultivable	Unassessed waste (Pot-kharab)	Total	Assessment	Judi	Water rate (forming a part of the assessment)	Cash rent paid	Period of the lease	Terms regarding sharing of produce				

from the trees must be included in the year's farm receipts and this we have included under the head 'other sources of income.'

List of Crops:—There was given, in our original schedule, an exhaustive list covering the whole range of crops grown in the tract. It was meant to help the fieldman in filling the two forms, III-B and III-C. After the fieldman had asked for information field by field, he read out this list to the farmer and made sure that no crop was left out.

Form III-A :—This is an entirely new form used for recording the dues paid annually to the *balutedars* (or village artisans and servants) entitled to a share of the produce at the time of harvest. The *baluta* system is peculiar to India. There are about a dozen of these *balutedars* in each village; but their number is not invariably fixed from village to village.

Form III-B :—This form is meant for enumerating the seeds or plants required for the crops grown in each of the fields. The modification in this form consists in the information being enumerated field by field.

Form III-C :—This form also provides for information being recorded field by field. In some cases, however, as pointed out above, the information for a few fields may have to be put together.

Forms IV-A and IV-B :—For recording the information obtained from the farmer about livestock we used these two forms, The former is meant to be a 'group record;' that is, it recorded in a general way the total number of each kind of livestock (such as bullocks, cows, buffaloes, etc.) This form is essentially the same as used in other countries, This general group record was immediately followed by the detailed record (Form IV-B). In this case, the farmer was asked to state, first of all, the name of every one of the bullocks in order to avoid confusion while asking further questions about them. No such form (i. e. form IV-B) seems to be in use in U. S. A. or England. When both the forms were filled the fieldman could compare the two; and if any incongruity was detected, it was referred to the farmer for explanation.

A point of modification to be noted in connection with the livestock record is the special provision made in form IV-A for recording the number of useless cattle kept by the farmer such as old bullocks that could no longer be used for farm work or cows that had become permanently barren.

Form IV C :—This is meant for recording the livestock products obtained and is similar to that used in U. S. A. and England.

Two points to be noted in this form are the provision specially made by us (i) for recording production of milk month by month, and (ii) for recording the total quantity of manure obtained during the year from live-stock on the farm.

Form IV D:—This form provides for a summary of the three previous forms, namely, IV-A, IV-B and IV-C. This is essentially the same as that used elsewhere, except that separate columns have been provided for classifying the data according to different kinds of livestock.

Form V:—This form is meant for taking an inventory of the implements. It provides a detailed and exhaustive list of all kinds of implements that are in use in the tract. Most of the implements used in this tract are wooden implements of the traditional type, excepting the iron plough which has very largely replaced the wooden plough, and the iron '*mot*' (water-lift) which has in some instances replaced the one made out of leather. Most of the wooden implements have to be made to order locally by the village carpenter, when required by the farmers; and no ready-made implements are to be had in the market. There were thus no current market prices available for the valuation of the implements. We have based their valuation mainly on the average costs of manufacture ascertained from the different villages in the tract. There was hardly any difference in regard to these costs as between different villages. The depreciation during the year was worked out by dividing the present worth of an implement by the estimated number of years it was likely to last in future.

As regards repairs, they are mostly taken care of by the *balutedars* i. e. the village artisans, such as the carpenter, the blacksmith, the leather-worker, etc. Payments for repairs are generally made in kind and are mostly covered by the *baluta* dues, recorded in the special form meant for them, namely Form III—A. This form, therefore, includes only special payments made, in respect of the larger repairs, to *balutedars* or other persons.

Form VI:—This form is required for recording receipts from other sources of income. It is, in all essential respects, the same as the form used in U. S. A.

Forms VII-A, VII-B and VII-C:—These three forms were used for recording data about fodder and other cattle feeds. Form VII-A refers to the feeding stuffs purchased and VII-C is the inventory of fodder on hand at the beginning and at the end of the year; neither of these differs from the American forms. It is only

Form *VII-B that has been specially introduced by us. It records the* estimated monthly consumption of fodder and concentrates as it varies during different seasons in the year. This acts as a useful check on the totals of the fodder account arrived at from other forms.

Form VIII-A:—In the case of this form, meant for recording manure and fertilizers purchased, no modification was found necessary.

Form VIII-B:—This form, which is meant for recording casual hired labour, has not been modified in any essential feature. In filling this form, however, the fieldmen had to use a supplementary form supplied to them. This supplementary form contained itemised lists of operations, in respect of all the principal crops, for which hired labour may be employed. The fieldman had to go over this list for each of the crops grown by the farmer and ascertain the amount of hired labour, if any, employed for each item. He then entered the summarised information in the schedule form.

Form VIII-C:—This requires no comment.

Form VIII-D:—This form is an exhaustive list of items of current expenditure. Some of these items have been merely recapitulated from the previous forms. It should be noted that while all the expenses incurred during the year under the head 'repairs,' were enumerated in the proper schedule, the whole of this sum was not necessarily debited to current expenses. Only such part of this expenditure as could be considered as falling under normal repairs was so debited. All items in the nature of renovations, additions, etc. were excluded as falling under the capital account.

Forms IX-A, and IX-B:—These two forms need no comments.

Form IX-C:—This is meant for finding out, approximately, the extent to which the operator receives cash from family members working outside, which help him towards meeting the deficit, if any, in his farm business.

PART II

CHAPTER II

GENERAL DESCRIPTION OF THE TRACT

1. Location and Physical Features*

The tract chosen for the present farm management survey lies in the Wai taluka of the Satara district, Bombay province, and occupies about a third of that taluka. The maximum length (east-west) of the taluka, is about 30 miles and the maximum breadth (north-south) is about 24 miles, the approximate area being about 390 square miles. The taluka lies in the extreme north-west of the district and is bounded on the north by Bhor state and the Nira, on the east by the Phaltan state and the Koregaon taluka, on the south by the Satara and Javli talukas, and on the west by the Bhor state. The taluka is surrounded and crossed in a number of directions by spurs of the Sahyadris while it is divided by the Mahadeo range into two halves belonging to the valleys of the Krishna and the Nira. The Krishna half is decidedly the more fertile and pleasing of the two.

The tract surveyed by us lies entirely in this Krishna valley portion of the taluka and in the so called 'transition tract' of the Bombay Deccan. The portion of the transition tract lying within the Satara district forms in it a central belt. This central belt is a tract of rich well-watered valleys nearly parallel to each other, stretching and widening to the east and south-east and separated by sharp-cut spurs which lie east and south-east from the main line of the Sahyadris. The chief valleys are, beginning from the north, the Krishna, the Koyna and the Varna valleys.

In the west the beginnings of these valleys are little more than ravines hemmed in by high steep hills. The soil is a bright barren iron clay, the small hamlets are perched on knolls or set on high stream banks, the people are poor, and most of the crops are grown with the help of *rab* or wood ashes. Further east the flanking hills grow lower, rounder and barer. Patches and belts of valuable teak gradually give way to tillage as the dales open into broad level valleys with babhul-fringed stream-banks and lines of road shaded by lofty trees. These broad valleys are the richest part of the dis-

---

* The description in this section is based largely on that contained in the Gazetteers and Settlement reports.

trict. Near the centre of the valley, generally on the banks of the main stream, sometimes two or three miles apart, are large and often shady villages. Near the villages, along both banks of the central river, the deep and well-watered black soil yields a succession of rich crops which keep green till February. In the rains all is green, and the fields pass to the foot of the hills and sometimes climb the lower slopes. After October, when the rain-crops are reaped, the outer fringe of the valley lies barren and bare.

The following quotations[1] describe the hill-ranges by which the tract, we have surveyed, is bound and the Krishna river and valley which are its main features. "Kamalgad is a short spur which starts about five miles north of Mahabaleshwar and passes about ten miles east ending in the hill-fort of Kamalgad. It forms the water-parting between the Valki on the left or north and the Krishna on the right or south. The second is the Vairatgad spur up a branch of which the Wai-Mahabaleshwar main road climbs. It leaves the Sahyadris close to the village of Mahabaleshwar and stretches south-east about twenty miles, ending a little beyond the hill-fort of Vairatgad. This spur forms the water-parting between the Krishna on the left or north-east and the Kudali, a feeder of the Krishna on the right or south-west. It has one fort of Vairatgad about six miles south-east of Wai." "The second system of Satara hills is the Mahadeo system. In the north of the district the Mahadeo range starts about ten miles north of Mahabaleshwar and stretches east and south-east across the whole breadth of the district. The course of the range for the first thirty miles, to a little beyond the Khambatki pass on the Satara-Poona road, is east. About Vela, about four miles east of the Khambatki pass, it turns south-east". "From the main range of the Mahadeo hills three spurs stretch south, out of which the Chandan-Vandan spur in the west runs about half across the district. The Chandan-Vandan spur is the water-parting between the Krishna valley on the west and the Vasna valley on the east. The spur starts from the Mahadeo hill at Harli about a mile and a half east of the Khambatki pass and about twelve miles north-east of Wai."

The most conspicuous physiographic feature of the area studied is the Krishna valley. The valley is surrounded by hills practically on all sides; and there is a general gradient from the foot of the hills towards the river-bed. The gradient allows passage of flood-water quickly. The elevation of the valley is about 1900 ft. above sea-level. The river Krishna rises on the eastern brow of the Mahabaleshwar plateau four miles west of the village Jor in the extreme west of Wai. The source of the river is about 4,500 ft. above the sea in 18° 1' north latitude and 73° 41' east longitude. From its source the Krishna runs east for about 15 miles till it reaches the town of Wai. From Wai the course of the river is south. About ten miles from Wai it receives the Kudali from the right about two miles south of Panchwad. The banks are 20 to 30 ft. high and generally sloping, earthy and broken. The river-bed, though in parts rocky, as a rule is sandy. In the Wai and Satara talukas, except that melons are grown in its bed, the water of the Krishna is little used for irrigation, except here and there by '*bhudkis*' or pits sunk on deep river banks. During the fair season the Krishna is everywhere easily forded, but during the monsoon there is a considerable body of water. Within limits of the Wai Taluka the Krishna is bridged at Bhuinj on the Poona-Satara road, and at Wai on the Poona-Mahabaleshwar road.

---

[1] The Gazetteer of the Bombay Presidency, 1885. Vol. XIX pp. 5 and 7.

The Krishna valley area forms a homogeneous tract as regards communications, climate and crops that can be grown. It is this homogeneous portion of the Wai taluka which forms the tract chosen by us for the survey.

2. Area and Population

The following tables give figures of the area and population regarding the Satara district, the Wai taluka, the tract of 39 villages chosen by us and the group of 21 villages from which the farmers were selected.

TABLE No. 3

Area and Population of District, Taluka, Tract and Group.

	Area (Acres)	Population in 1931	Net cultivated area in 1935-36 (Acres)
Satara district	3,025,409	1,179 712	2,130,025
Wai taluka	206,592	83,070	139,154
The selected tract of 39 villages	87,660	49,563	50,633
The 21 villages from which the farms were selected.	59,515	38,848	40,457

TABLE No. 4

Area and Population of the 21 villages from which the farms were selected.

Village		Area (Acres)	Population (as per census of 1931)
1	Asla	2,172	749
2	Bavdhan	6,846	3,047
3	Bhuinj	4,254	2,565
4	Bopardi	1,903	872
5	Chandak	2,509	1,010
6	Dehgaon	3,459	1,038
7	Gulumb	2,691	1,450
8	Kalangwadi	1,101	300
9	Kavtha	2,868	1,911
10	Kenjal	2,724	1,776
11	Kikli	4,620	2,187
12	Lohara	1,669	871
13	Menavli	1,215	652
14	Ojharda	3,017	1,556
15	Panda	945	691
16	Panchwad	1,613	998
17	Pasarni	3,096	1,852
18	Surul	3,037	1,449
19	Udtara	1,759	1,463
20	Virmada	750	651
21	Wai (including Songirvadi and Sidhanathvadi)	7,267	11,760
	Total ...	59,515	38,848

3. Rainfall

The average annual rainfall at Wai during the 15 years, 1924 to 38, was 28·99 inches. As regards the seasonal distribution during the same period, the average fall during the *kharif* season (5th June to 14th August) at this place was 13·5 inches, the average fall for the *rabi* season (15th August to 21st October) was 11·31 inches, and the average fall during the 'Late Rains' period (22nd October to 31st of the December) was 2·42 inches. So that, out of the average annual total fall of 28·99 inches, the average fall during the growing period (June to December) was 27·23 inches i. e. about 94 p. c. of the total. The average of the total number of rainy days per year during the fifteen years was 80, out of which there were 40 rainy days during the *kharif* season, 27 rainy days during the *rabi* season and 5 during the 'Late Rains' period.

Although the total average rainfall at Wai, which represents fairly the average rainfall of the tract under survey, is generally sufficient for dry crops, there are years when it is either not sufficient or not well distributed. In such years the crops require to be irrigated at least twice before they reach maturity. This need is especially felt in the eastern part of the tract, and in the less retentive soils in the tract as a whole. In such cases the supply of irrigation comes chiefly from *pats* (i. e. water-channels) led from streams, some of which run all the year round. Such sources of irrigation are available in most villages in the tract, and have made it possible for the farmers to grow a variety of garden crops.

In the absence of any temperature records at Wai or any other place in the tract, no information regarding the ranges and variations in temperature is forthcoming.

4. Soils

The geological formation of the tract is the same as of the whole of the Satara district which falls within the Deccan trap area. As in other parts of the West Deccan, the hills are layers of soft or amygdaloid trap separated by flows of hard basalt and capped by laterite or iron clay. The soils of the district belong to three main classes, red in the hills and black and light-coloured in the plains. The black or *kali* soil is generally found in belts lying along the banks of the leading streams, the breadth of the belt varying with the size of the stream. In the Krishna Valley is found the broadest belt of this rich soil, which yields the best garden and dry crops in the district. Under the name of black is included the slightly lighter and less productive *kalvat* which is mixed with a small quantity of *murum* or crumbly trap. The leading light coloured soils are the *malran* or *murum mal* a hard rocky soil, commonest at the bases of the more eastern hills. The same soil, mixed with red at the foot of the Sahyadris, forms one variety of the soil called *tambad* or red. Another soil known as *tambad* is black soil mixed with red. Near the heads of the streams which issue from the Sahyadris, the soil of the valleys is red or *tambadi* and yields most of the rice grown in the district. There is also the soil called *chunkhadi* which is a broken trap or murum soil strongly charged with lime. Lime is also found in black soils near river beds. In the plains the black soil is generally so heavy as to make ploughing impossible with less than four bullocks and in many places as many as five pairs of them are required.

5. Crops

The total net cultivated area in the whole tract (comprising the 39 villages) in the year 1935-36, for which figures were compiled from the village records at the commencement of the survey, was 50,633 acres. The total 'crop acres' in the tract during the same year were 57,421 of which the acreage under the different important crops was as set out in the table below.

TABLE No. 5

Acreage[1] under Important Crops in the tract surveyed (1935-36)

Crops[2]	Acres	Crops[2]	Acres
Rabi Jowar (Shalu) ...	17,538	Linseed ...	536
Bajri ...	13,039	Potatoes ...	487
Gram ...	4,613	Matki (Kidney Beans)...	476
Groundnut ...	3,336	Peas ...	390
Kharif Jowar (Argad) ...	3,329	Sugarcane ...	354
Wheat (including Spelt wheat) ...	2,198	Chillies ...	233
		Karala (Niger seed) ...	231
Safflower ...	2,123	Vegetables ...	164
Udid (Black Gram) ...	1,769	Bananas ...	156
Hulga (Horse Gram) ...	1,222	Guavas ...	66
Mug (Green Gram) ...	991	Pomegranates ...	59
Tur (Piaeon Pea) ...	807	Onions ...	53
Coriander ...	608	Betelvines ...	29
Turmeric ...	561	Oranges	19

Of these argad, jowar, bajri, groundnut, udid, hulga, mug, tur, coriandes, matki, karala and peas are grown in the *kharif* season; whereas, shalu jowar, gram, wheat, safflower and linseed are grown in the *rabi* season. Potatoes for consumption are generally grown as a *kharif* crop; while those grown during the *rabi* season are meant to be used chiefly as seed-tubers for the next year's *kharif* crop Almost all the crops mentioned above are grown as dry crops, that is, they depend mainly on the rainfall, except spelt wheat and potatoes grown in the *rabi* season. Some of these crops, however, may require to be irrigated twice or thrice during the season whenever there is a shortage of rainfall.

The remaining crops are garden crops i.e. generally grown only where there are facilities of irrigation. Of these, fruit, betelvine and sugarcane have to be irrigated almost throughout the year except during the rains. Turmeric, onions, chillies, potatoes (grown in *rabi* season), spelt wheat and other garden crops vary in their total irrigation requirements according to their growing periods.

---

[1] These figures cannot be taken to be entirely accurate. The records are not always kept up-to-date. The area under sugarcane in the table is, for example, an obvious overestimate.

[2] The botanical names of these crops are given in an Appendix.

6. Roads

The whole of the taluka is at some distance from the railway but is connected with it by road. The road communications are good in almost all directions. The main Poona-Satara road intersects the taluka from north to south. From east to west, the road from Mahabaleshwar to Wathar station passes through Wai.

Wai itself has excellent link roads to shorten the connection with the Poona-Satara road to north and south; while Local Board roads of varying quality radiate from it to Menavli and Dhom, to Pasarni, to Bavdhan and to Lohara. Motor cars ply regularly from Wai to Poona, to Satara and to Wathar. The portions of the main roads which fall within the tract are as follows :—

(1) Vela-Surul-Panchwad-Virmada.
(2) Shirgaon-Ojharda-Wai.
(3) Wai-Panchwad.
(4) Surul-Wai.

Besides these, there are approach roads joining different villages to the nearest highway. On the whole, this tract is fairly well supplied with hard-surfaced roads, although the approach roads are in some cases unsatisfactory. This is especially the case in the group of villages in the south-east of this tract around Kikli. Consequently, there are some places where transport and travel are blocked by mud and where the farmers are 'mud-bound' or 'water-bound' for a considerable time during the monsoon.

7. Markets

Almost all kinds of produce except groundnut, turmeric, potatoes and coriander-seeds produced in the tract are consumed locally within the tract or in the nearby consuming centres like Panchghani, Mahabaleshwar and Mahad. The marketing centres situated within the tract are three, namely Wai, Bhuinj and Surul, of which Wai is by far the most important. The weekly markets at these places are held on Monday, Saturday and Sunday respectively. Most of the wholesale transactions of any importance take place at the Wai market; the other two markets serve generally the weekly needs of the people in the surrounding villages, who take to the market, grain or other produce in small head-loads for sale and buy oil, salt, spices and other household provisions for the week.

Wai itself, although of no industrial importance, has a resident population of about 11,000 and is able to consume a good deal of the surplus produced in the tract such as grain, vegetables, fruit, milk, gul (raw sugar), etc. Next to Wai, the two hill stations near Wai, namely Panchghani situated at a distance of 8 miles and Mahabaleshwar situated 12 miles from it, are two important consuming centres. Mahad, a town in the Konkan, lying still further towards the west at a distance of about 55 miles from Mahabaleshwar and having a population of about 20,000, has always been a good consuming centre for some of the grain, gul, turmeric, oil, chillies, and recently for vegetables and fruit produced in the tract. As for milk, the consumers at Wai draw their supplies of it to a large extent from the surrounding villages situated within a distance of about 3 to 4 miles.

Eggs are either taken by the villagers to the nearest weekly market for sale, or they may be sold 'in situ' to itinerant merchants or their agents who buy and dispatch them to Bombay, a few being sent to the nearest consuming centres like Panchghani and Mahabaleshwar. The only centre, in the tract, for the marketing of livestock is the weekly market at Wai. The transactions take place either direct between the buyers and sellers or through brokers most of whom belong to the Māṅg caste. Most of the traders in buffaloes at this weekly market are also Māṅgs. Unproductive animals are generally purchased for export to Bombay by *Kasais* or butchers who belong to the Muslim community. Anewadi, a village situated at a distance of 11 miles from Wai, just beyond the south-eastern border of the Wai taluka is more important as a weekly livestock market than Wai itself and, therefore, needs special mention here. A cattle fair is also held at Anewadi once a year; and hundreds of cattle brought for sale from distant places attract large crowds of people to this fair. Besides livestock, several kinds of crop produce are also dealt with at this market.

As regards groundnut, the farmer keeps in stock a small part of the produce for home use. Whenever he requires any oil he gets it extracted from the nuts in stock by the oilman of the village with the help of his crude oil-mill worked by bullock power. The oil is used by the farmer in his household and the cake is fed to his livestock. The surplus stock of groundnuts is sold either through local brokers or direct to traders at Wai or at other convenient points near the two railway stations, namely Wathar and Satara-Road on the M. S. M. Railway, where hullers and crushers worked by power have been established. At Wai a part of the produce is hulled and the seeds are exported by the dealers usually by road to Bombay ; the remaining portion is crushed and the oil is either consumed locally or exported to Mahad. In the case of the produce sent to the Wathar station, the pods are first shelled and then the seeds are dispatched to Bombay by railway. There are other places in the neighbourhood like Vaduth near the Satara-Road station where the oil from the nuts is extracted by power-crushers and sent out to consuming centres in the neighbourhood.

In the case of turmeric, the preparation for the market, which consists of boiling the rhizomes and then drying them in the sun, is always done by the farmer himself and the produce is sold, either direct or through local brokers, to traders located at the same places as above who export it to Bombay and other places.

In the case of potatoes grown in the western part of the tract, the surplus produce is sold by the farmer to local traders who send them to the Poona or Bombay markets on consignment; while as regards the potatoes grown in the eastern part of the tract, most of the growers usually sell them to the representatives of merchants in Bombay who come down to Wathar during the season, while a few growers themselves send them direct to Bombay on consignment. Coriander seeds are sold either through brokers or direct to traders or their representatives at Wai and other places within or outside the tract.

CHAPTER III

SEASONS AND PRICES

1. The Season in 1936-37

Table No. 6 shows the monthly distribution of rainfall as recorded at Wai during the two years under report. The total rainfall during the twelve months from May 1, 1936 to April 30, 1937, was 25·75 inches i.e. 3.24 inches less than the average; the total rainfall during the growing period June 5 to December 31 of the first financial year was 19·75 inches i.e. about 70 per cent. of the average of the last 15 years.

The rainfall during this year's *kharif* season was only 8·57 inches i.e. 63·5 per cent. of the average. Its distribution was also not satisfactory. The fall in June (6·41 inches) was rather too much, being 147 per cent. of the average (4·36 inches). The fall in July was 1·04 inches which is only 14 per cent. of the average; while the fall in August was 1·45 inches i.e. about 33 per cent. of the average. It will be noticed that the rainfall during the *kharif* season was at first i. e. in June, too much and then too little in July and August This naturally affected the *kharif* crops adversely, and is estimated to have reduced their yield by half or even more.

As regards the *rabi* season (August 15 to October 21), the rainfall was 8·85 inches i. e. about 78 per cent. of the average. The fall in September (8·49 inches) was more than sufficient and satisfactory, being 133 per cent. of the average ; but the rainfall in October was very deficient, there being only 5 cents of rainfall instead of the average fall of 3·9 inches. The deficiency in October was, however, partly compensated by a fall of 2·33 inches in November, the average for which month is only 1·33. The *rabi* crops consequently did not suffer as badly as the *kharif* crops, the yields for the season being roughly estimated to have been reduced by about a quarter or a third·

2. The Season in 1937-38

The rainfall during the period of 12 months from May 1, 1937 to April 30, 1938 was 29·29 inches i. e. almost the same as the average, the total number of rainy days being 79. The rainfall during the growing period was 27·14 inches i. e. about the same as the average. As for the *kharif* season the total precipitation was 15·25 i. e. more than the average by 1·75 inches. The fall during June was 5·13 inches i e. 75 cents above the average. The fall in July was 9·71 inches i. e. about 1·34 per cent. of the average ; and that during August was only 70 cents i. e. only about 16 per cent. of the average. In

TABLE No. 6

Monthly Distribution of Rainfall at Wai

Month	Average of rainfall for the fifteen years 1924 to 1938 (inches)	During 1936–37		During 1937–38	
		Total rainfall (inches)	Number of rainy days	Total rainfall (inches)	Number of rainy days
May	0·89	0·41	1	0·31	1
June	4·36	6·41	13	5·13	13
July	7·25	1·04	13	9·71	27
August	4·41	1·45	19	0·70	8
Sept.	6·39	8·49	18	8·01	14
Octo.	3·09	0·05	1	3·34	6
Novem.	1·33	2·33	6	...	...
Decem.	0·12	...	...	0·25	2
Jan.	0·06	...	...	...	...
Feb.	0·01	...	...	0·22	1
March	0·15	...	...	1·13	3
April	0·93	5·57	5	0·49	4
Total	28·99	25·75	76	29·29	79

spite of the fact that the rainfall in the earlier months was above the average, the very long break in the rainfall at a critical time in August affected the yield of the *kharif* crops adversely. It is estimated that the yield was thereby reduced by about 40 p.c.

The rainfall during the *rabi* season was 11·24 inches which was about the same as the average (11·31 inches). The fall in September was 8·01 inches which was more than the average by 1·62 inches, while the fall in October was 3·34 inches i. e. about 25 cents more than the average. Although the amount of the total rainfall for the *rabi* season, as also that during the months of September and October, was sufficient, its distribution was not satisfactory. Out of the total fall of 11·24 inches for the *rabi* season, 6·24 inches (i. e. more than 50 per cent.) fell just within a week, viz., the last week of September, 1937. Out of this again 4·53 inches fell within only 2 days, (1·98 inches on the 23rd and 2·55 on the 30th of September). The sudden downpour of 1·98 inches within a very short time caused considerable damage in the tract. Brooks and ravines began at once to flow in torrents and broke down several embankments especially in the villages of Vela, Kenjal, Surul, Kavtha and Ojharda. A good deal of damage was caused to the standing *kharif* crops and to the newly sown *rabi* jowar, which consequently required re-sowing. This is a typical instance of how badly, untimely rainfall on a single day can affect the crops. This is again estimated to have reduced the yield of the *rabi* crops by about a quarter or a third.

3. Prices

Table No. 7 gives the average harvest prices that ruled in the tract during 1936–37 and 1937–38. The fieldmen were instructed to keep a week to week record of prices obtaining for all important kinds of produce in each group of villages. A special price record was also maintained for the market centres of Wai, Bhuinj and Surul. Thus for the *rabi* harvest of 1936–37 and for both the harvests of 1937–38 the table of prices gives the average of a large number of price quotations collected on the spot from time to time. For the *kharif* harvest of 1936–37 the average is based on information relating to that harvest collected during the months of May and June 1937 in individual villages and from traders at Wai by the fieldmen. The prices given in this table were also the prices used by us for calculating the value of unsold agricultural produce. No special comment is needed on this table. Attention may, however, be drawn to the large variations as between these two years in the prices of the important money crops, viz., groundnut, potatoes, turmeric and gul. While the prices of groundnut and potatoes fell sharply in 1937–38 from the level of 1936–37, the prices of turmeric and gul showed a remarkable increase in 1937–38 over the level of 1936–37.

Tables Nos. 8 and 9 give data relating to prices for some years previous to 1936–37. The data relating to prices of jowar, bajri, wheat and gram have been extracted from the record of prices maintained at Wai in the Mamlatdar's office, while those relating to other produce have been compiled from information obtained, by means of a special questionnaire, from farmers in each village and from some important tradesmen at Wai. The figures relating to 1938–39 in both tables have been compiled from information collected by fieldmen from time to time during the year. The tables serve to bring out the fact that till 1934–35, prices of agricultural produce were very depressed. The first movement upwards was felt in 1935–36 and this was continued in 1936–37. The years 1937–38 and 1938–39 reveal no consistent trend; prices of some commodities during those years rose above the level reached in 1936–37, while those of others fell below that level.

TABLE No. 7
Harvest Prices in 1936-37 and 1937-38

Description	Price in 1936-37	Price in 1937-38	Unit	Remarks
	Rs. As. P.	Rs. As. P.		
Groundnut (early variety.) ...	28 0 0	16 0 0	per khandi of 21 maunds.	These prices are for unshelled pods and not for the seeds.
Groundnut (late variety.) ...	28 0 0	19 0 0	,, ,,	
Groundnut (local variety.) ...	30 0 0	20 0 0	,, ,,	
Turmeric (boiled and dried but not polished.) ...	1 12 0	2 12 0	per maund of 13 seers.	
Turmeric sets (neither boiled nor dried.) ...	1 0 0	1 8 0	,, ,,	
Gul (or raw sugar)	1 0 0	2 0 0	,, ,,	
Potatoes (Kharif)	25 0 0	20 0 0	per khandi of 20 maunds.	
Potatoes (Rabi) ...	2 8 0	1 4 0	per maund of 13 seers.	
Coriander seeds ...	2 8 0	1 0 0	for 24 seers.	
Onions ...	0 4 0	0 4 0	per maund of 13 seers.	
Sweet potatoes ...	0 12 0	0 12 0	,, ,,	
	Seers	Seers	per rupee	
Jowar (Kharif) ...	13	11	,, ,,	
Jowar (Rabi) ...	11	11	,, ,,	
Bajri ...	11	10	,, ,,	
Paddy ...	14	14	,, ,,	
Wheat (Spelt) ...	11	12	,, ,,	
Wheat (Bakshi)...	4	5	,, ,,	
Wheat (Kali Kusal)	5	6	,, ,,	
Gram ...	9	9	,, ,,	
Safflower ...	14	16	,, ,,	
Linseed ...	7	8	,, ,,	
Udid ...	8	8	,, ,,	
Chavli ...	10	10	,, ,,	
Tur ...	8	8	,, ,,	
Matar (Peas) ...	9	9	,, ,,	
Matki ...	10	9	,, ,,	
Mug ...	9	8	,, ,,	
Mugi ...	10	10	,, ,,	
Hulga ...	16	16	,, ,,	
Sesamum ...	6	6	,, ,,	
Karala ...	8	8	,, ,,	

Discription	1936-37	1937-38	Units
	Rs. As. P.	Rs. As. P.	
Prices of Fodder:—			
Stalks of Rabi-Jowar (Dry)	5 0 0	6 0 0	per 100 bundles.
Stalks of Kharif-Jowar.	4 0 0	4 0 0	„ „ „
Stalks of Bajri	2 0 0	2 0 0	„ „ „
Bhuskat (i. e. a mixture of bits of Bajri stalks and leaves and stalks of leguminous crops.)	0 8 0	0 8 0	per bundle. (equivalent to a headload.)
Groundnut stalks.	0 8 0	0 8 0	„ „ „

TABLE No. 8

Prices of Staple Food-Grains

(in seers per rupee)

	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39
Jowar	12	12	13	12	13	11	11	11	11
Bajri	12	12	12	10	9	10	11	10	10
Wheat	5	5	6	5	6	5	5	6	6
Gram	8	8	12	10	12	10	9	9	8

N. B.:—Although new standard weights and measures have been recently introduced according to an Act of the Government of Bombay, it appears that it will take some time before farmers get used to them. We had, therefore, to collect the data in terms of the old weights and measures to which the people were accustomed. The equivalents of some of the local weights and measures referred to in the above table are as follows:-

1 Maund (by weight) = 13 (standard) seers of 80 tolas each.

1 Seer (by measure) = approximately 1·5 seers (standard) of 80 tolas each.

TABLE No. 9

Prices of Money Crops

	1934-35	1935-36	1936-37	1937-38	1938-39
	Rs.	Rs.	Rs.	Rs.	Rs.
Gul (raw sugar), per maund of 13 seers ...	1/4	1/1	1	2	2/8
Turmeric (boiled and dried), per maund of 13 seers ...	1/4	1/8	1/12	2/12	3
Groundnut (late variety), per khandi of 21 maunds ...	15	28	28	19	17
Potatoes (Kharif season), per khandi of 20 maunds. ...	14	16	25	20	17
	Seers	Seers	Seers	Seers	Seers
Coriander (seeds), seers (by measure) per rupee. ...	20	20	24	24	20
Safflower, seers (by measure) per rupee. ...	16	12	14	16	16

CHAPTER IV

DEFINITIONS

A number of technical terms have to be employed while presenting the results of this investigation. These terms have been generally used in the same sense in which they are used in the United States and Great Britain. In some cases, however, we have used the terms in a modified or a restricted sense. The exact connotation of all the more important terms is indicated below.

Financial Year—covers a period of twelve months beginning from the 1st of July and ending on the 30th of June.

Farm—A farm is all the land which is directly farmed by one person, either by his own labour or with the assistance of members of his household or hired employees.

Farm Operator—is a person who operates a farm, either performing the labour himself or directly supervising it[1].

Classification of Operators according to Tenure—Farm operators are classified, according to the tenure under which they operate their farms, into three general classes as follows :—

(A) *Full Owners*[2]—are farm operators who own all the land which they operate.

(B) *Part Owners and Part Tenants*—are farm operators who own part of the land which they operate, and rent and operate additional land.

(C) *Full Tenants*—are operators who operate hired land only.

Acres operated—are the total acres, whether owned or rented, operated as one unit or farm by one man, partnership, or family.

Cultivated Area—represents that part of the farm which is under cultivation during the year. If more than one crop is grown on any of the land during the year, its acreage is counted only once for determining the area under cultivation.

Crop Acres—For arriving at the total of crop acres, any area under cultivation is counted as many times as it was under cultivation under different crops during the year.

---

[1] The operator is the person responsible for the year's farming operations. Thus if an owner directs the farm operations, he is the operator ; but if a tenant directs the operations, the owner is the landlord and the tenant is the operator.

[2] Inferior holders who have rights of alienation have been counted as owners by us and the land held by them has been taken to be owned land.

Adjusted Acres—represent the area of all types of land converted by value measure into standard acres[1].

Farm Inventory—is an itemised list of the land, buildings, equipment, livestock and supplies with their value at the date when the inventory was taken.

Capital—includes the value of all owned farm land, farm buildings, livestock, implements and tools owned by the operator. It does not include the house used by the farmer and his family for residential purposes, but it does include that part of it which is used for keeping his livestock, his stock of produce and implements. The average of the amounts at the beginning and at the end of the year is considered to be the capital invested in the business.

Receipts—is the sum of the receipts for livestock sold and for miscellaneous sales effected during the financial year, the receipts for crops (including fodder) and livestock products[2] sold, plus receipts for unsold produce at prices ruling when the crops were harvested or livestock products obtained, and the net appreciation on livestock during the financial year.

Other Sources of Income—comprise such items as money received for man or team labour, and other sources of income outside the farm business, to which some part of the business contributed. In this item are also included the value of fruit from trees, not forming part of a regular orchard, and of twigs etc., of trees used on the farm for fencing or in the household for fuel, and other produce from such trees.

Expenses—comprise all the farm business expenses (exclusive of any allowance for the unpaid labour of the operator and members of his family) and the net depreciation on livestock, farm buildings and implements during the financial year. They do not include any interest on any borrowings of the farmer, nor interest on the farmer's investment and capital.

Unpaid Family Labour—The value of the unpaid labour of the operator[3] and of the members of his family is determined on the basis of what it would cost to have the same work done by hired help or the amount of additional labour that the operator would have had to hire to carry on a business of the same size, had the labour of himself and the family members not been available.

---

[1] We have taken a 'standard acre' to mean an acre of dry land of the medium class in the surveyed tract in the Wai taluka, costing on an average Rs. 300 per acre.

[2] Young stock such as lambs, kids and chicken born and sold during the year have been included in "livestock products".

[3] By the operator's labour is meant only the manual work done by him. This does not include any allowance for any supervision work as such.

Net Appreciation on Livestock—is the amount by which the value of the livestock on hand at the end of the year plus the amount received for livestock sold exceeded the value of livestock on hand at the beginning of the year plus the amount paid for livestock purchased. Appreciation due to changes in the price level during the year is not included. This is estimated by ascertaining how much the stock on hand at the end of the year would have been worth at prices prevailing at the beginning of the year.[1]

Net Depreciation on Livestock—is the amount, by which the value of livestock on hand at the beginning of the year plus the amount paid for livestock purchased, exceeded the value of livestock on hand at the end of the year plus the amount received for livestock sold.

Number of livestock—The number of buffaloes, cows and other livestock, unless otherwise stated, means the average number for the year. This is the average of the two inventories.

Labour Units—The standard labour unit was considered to be equivalent to Rs. 108 p. a., which according to our data represent the average payment made for the services of a permanent farm servant for a year. All hired labour was converted into standard labour units by dividing the total cost of the hired labour (in rupees) by 108. The money cost of unpaid family labour was first ascertained by noting in each case the rate of wages at which labour similar in character could be hired. In doing this due regard was paid to the permanent or casual character of the labour employed and the consequential difference made in the rate of payment to it. The cost of the unpaid family labour was also converted by the method given above into labour units. The sum of the hired and the unpaid labour units represents the total number of labour units employed by the business during the year.

Animal Unit[2]—This measure expresses all types of livestock in one composite index. One animal unit is equal to one bullock, cow or buffalo. Young stock and other smaller types of livestock are expressed as fractions of one unit.

---

[1] Value of livestock extremely young at the time of the inventory and therefore specially liable to death was not included.

[2] This measure is based largely on the standards of Animal Units used almost universally in the U. S. A. and Great Britain. The conversion factors used in the present report are as follows:—

Bullock = 1·0 A. U.
Buffalo (male) = 1·0 A. U.
Buffalo (female) = 1·0 A. U.
Cow = 0·7 A. U.

Farm Income—is the difference between receipts and expenses. It is what the operator received for his own and his family's labour for the year and for the use of the capital which was invested by him.

Family Labour Income—is the farm income less interest at three per cent. on the average capital. It is what the operator and his family received for their work.

Investment Income—is the farm income less the value of the cost of unpaid labour of the operator and his family.

Net Profit—is what remains after deducting the cost of the labour of the operator and his family and interest at 3% on the capital invested.

Bull = 0·6 A. U.
Buffalo - Heifer = 0·5 A. U.
Buffalo - Bull = 0·5 A. U.
Heifer = 0·4 A. U.
Cow - Calf = 0·14 A. U.
Buffalo - Calf = 0·14 A. U.
Goat = 0·14 A. U.
Ewe, ram = 0·14 A. U.
Lamb or Kid = 0·7 A. U.
100 Adult poultry = 1·00 A. U.
200 Chicken = 1·00 A. U.

CHAPTER V

SIZE AND NATURE OF FARM BUSINESS

In this chapter we present the results of the survey in a series of tables in which the data relating to the farms surveyed in each village are grouped together. These tables will give a clear idea of the general nature of the agricultural economy of the tract. They serve also to bring out the differences in certain conditions as between the different parts of the tract surveyed.

The data in this and the subsequent chapter are presented in a series of tables, separately for the years 1936-37 and 1937-38. The comments are, however, confined to the data relating to the latter year. This has been done for a variety of reasons. In the first place, our original intention was only to cover the year 1937-38 and it was not found possible to make the sample for the year 1936-37 as representative as is necessary and desirable. The tables for the year 1936-37 relate only to 438 farms while those for 1937-38 cover 557 farms. Further, the reduced number in the 1936-37 sample is not spread uniformly over all villages and all types of farmers. For example, the villages of Kavtha, Kikli and Bavdhan have particularly small representation in the 1936-37 data. The inadequate representation of Kavtha, Kikli and to some extent of Kenjal has resulted in a less than proportionate representation of the more intensive irrigated cultivation in the tract. We have, therefore, thought it best to discuss chiefly the 1937-38 data as these are fully representative of all types of farm business. Another important reason why separate comments on the 1936-37 data have not been thought necessary is that there is little difference between the broad features of the data as contained in the tables for the two years. As pointed out above (Table No. 1), only 23 of the farm businesses studied in 1936-37, were not included in the 1937-38 study, and the large majority of the farmers for the two years are the same. In the circumstances little difference can exist between the data for the two years, at least so far as what may be called the comparatively static aspect of the farm business, is concerned. In respect of the size and scale of farming and its general character the averages for the two years are very close together. These are features which, if at all, change very slowly. The small difference that is, in these respects, sometimes observable, is due to the less than proportionate representation of the irrigated and intensive farm businesses in the 1936-37 sample. While there are obvious reasons why little difference should exist between the data relating to the durable characteristics of farm business between two successive years. There is nothing to show that the results of the farm business may not vary widely from years to year. As a matter of fact, however, the results for the two years work out very close together. They are, as the tables will show, so close together that any separate detailed comment on the 1936–37 data becomes entirely superfluous. The character of the seasons of the two years was not greatly different and the yields of crops did not differ markedly. Such differences as are observable in the average results are due to two factors. The first is the one mentioned above of the difference in the composition of the two samples, with the result that, for example, the turmeric and the money-crop cultivators in general are represented by very small numbers in 1936–37. The second factor is the variation in prices as between the two years. Table No. 7 above shows a considerable difference between the two years in respect of the prices of three crops viz, turmeric, groundnut and potato. Prices of the other important crops remained unchanged during the two years. In consequence of the variations in prices some difference has come about in the results of the working of farm businesses for the two years. This is specially noticeable in businesses in which either groundnut or garden crops, more particularly turmeric, predominated. It is remarkable that, in spite of this, the consolidated results of the working as shown in the final tables in this chapter are almost identical for the two years.

In order to avoid breaking frequently into later comments we indicate all the main differences exhibited by the data contained in the tables for 1936–37 from those for 1937–38, in anticipation at this stage. These comments are confined to the total and the average figures per farm for the whole tract. In the 1936–37 tables no material variation is to be observed in respect of any item included in the tables regarding size of farm operated, investment, total farm receipts and the summary of results. With regard to the distribution of cultivated area the total irrigated acres are on an average smaller in 1936–37, for reasons indicated above. While the total food grains area in the two years is much the same, there is some difference in the proportions of the total taken by jowar and bajri in the two years. In the livestock tables a minor point to be noticed is the slightly smaller average holding of goats, sheep and poultry in 1936–37. The crop combination tables reveal a somewhat greater concentration in classes 1 and 2 and a markedly low proportion in classes 9 to 12 in 1936–37. In livestock receipts the average value of total milk production per business as well as the average value of total milk sales per business is slightly greater in 1936–37. For the same year the tables for crop receipts show the average receipts for groundnut and *rabi* jowar higher and the average receipts for turmeric distinctly lower; the reasons for this have already been indicated above. The farm expenses tables reveal only minor differences such that in 1936–37 there is on an average a little less expenditure calculated on seeds, on the share of crop produce paid to the landlord and on manure and a slightly higher average expenditure on hired labour than in 1937–38.

1. Size of Farm

Table No. 10 presents information regarding the size of the farm and the distribution of the farm area. The data are presented in terms of actual acres and have not been adjusted according to any scale. The table shows that for the entire sample the area operated was, on an average, 12·5 acres per farmer; of this 9·5 acres was under cultivation, 2·1 acres under pasture, only 0·2 acre under fallow and 0·8 acre was permanent waste. The table also shows that about two-thirds of the area of the farm was owned by the operator, the remaining third being rented. For the tract as a whole cash and cropshare renting seem almost equally common.

There are, of course, a large number of variations in conditions as between village and village. The farm area is specially small in some villages such as Virmada and Panchvad. On the other hand it is comparatively large in some villages e.g. Gulumb, Surul, Dehgaon and Kalangwadi. The main reason for the larger average farm area seems to be the larger proportionate area under pasture and waste. Large pasture areas are to be naturally found in villages which include within their boundaries considerable portions of hillsides. The largest pasture areas are to be found in Gulumb, Surul, Bopardi, Dehgaon and Bavdhan; and the largest wastes in Gulumb, Surul, Kavtha, and Bopardi. The practice of putting land under fallow is not at all common in this tract, and for farmers in some villages no land was noted under fallow. No special significance can, therefore, be attached to the figures in this column. The variations among villages in respect of owned and tenanted land seem to have no relation to any important economic or geographical factor. Wai, as being an almost urban centre, shows naturally a low proportion of land owned by the operator, but a very low proportion of owned land is also to be found in Gulumb, a hillside village at a distance from Wai and the main roads. While Chandak, which is adjacent to [illegible] shows more than three-quarters of the average farm area

TABLE No. 10

Size of Farm (1937-38).

AREA OPERATED (ACRES).

	Village.	No. of farms.	Area operated			Total	Utilisation of area operated			
			Owned	Cash rented	Share rented		Cultivated	Fallow	Pasture	Waste
1	Asla ...	23	212·2	67·3	49·0	328·5	251·2	1·5	67·0	8·8
2	Bavdhan ...	31	204·8	123·9	67·7	396.4	292·1	...	99·2	5·1
3	Bhuinj ...	27	166·2	80·6	73 4	320 2	289·9	0·7	16·8	12·8
4	Bopardi ...	25	180·4	37·0	71·7	289·1	172·4	...	82·6	34·1
5	Chandak ...	25	250·8	12·4	32·8	296·0	221·3	0·9	59·1	14·7
6	Dehgaon ...	19	275·1	3·3	25·5	303·9	192·2	22·4	66·3	23·0
7	Gulumb ...	26	249·8	254·2	91·5	595·5	272·6	0·1	216·7	106·1
8	Kalangwadi ...	21	235·4	34·5	40·4	310·3	267·5	1·7	25·5	15·6
9	Kavtha ...	35	297·9	29·3	84·7	411·9	333·3	11·9	25·9	40·8
10	Kenjal ...	34	276·2	27·9	37·4	341·5	288·7	0·9	39·4	12·5
11	Kikli ...	36	295·4	52·4	53·1	400·9	350·1	18·5	18·9	13·4
12	Lohara ...	15	124·0	32 1	25 0	181·1	139 1	2·5	26·0	13·5
13	Menavli ...	23	151·7	90·9	55·1	297·7	189·3	...	80·4	28·0
14	Ojharda ...	31	280 8	15·4	105·1	401·3	367·6	0 2	27·6	5·9
15	Panda ...	17	141·9	10·5	34·8	187·2	169·0	8·6	6·1	3·5
16	Panchwad ...	23	142 3	28 1	17·5	187·9	171·3	2·0	12 0	2·6
17	Pasarni ...	39	298·2	87·7	61·6	447·5	357·5	4·3	70·9	14·8
18	Surul ...	27	350·1	15·4	47·8	413·3	223·8	...	140·1	49·4
19	Udtara ...	22	201·9	22·9	23·2	248·0	219·7	0·8	24·6	2·9
20	Virmada ...	22	124·7	20·4	18·4	163·5	158·4	...	3·8	1·3
21	Wai ...	36	173·0	179·9	119·0	471 9	366·3	8·1	82·5	15·0
	Total ...	557	4632·8	1226·1	1134·7	6993·6	5293·3	85·1	1191·4	423·8
	Average per farm	...	8·3	2·2	2·0	12·5	9·5	0·2	2·1	0·8

TABLE No. 10-A

Size of Farm (1936-37).

AREA OPERATED (ACRES).

Village	No. of farms	Area operated.			Total	Utilisation of area operated			
		Owned	Cash rented	Share rented		Cultivated.	Fallow	Pasture	Waste
1 Asla ...	22	204·6	63·1	49·0	316·7	241·7	1·6	65·0	8·4
2 Bavdhan ...	18	125·5	88·9	36·3	250·7	156·6	...	90·3	3·8
3 Bhuinj ...	29	190·3	69·4	77·1	336·8	315·8	...	12·0	9·0
4 Bopardi ...	24	180·4	14·5	60·5	255·4	151·2	2·0	70·5	31·7
5 Chandak ...	18	152·9	8·7	17·5	179·1	127·3	0·5	41·1	10·2
6 Dehgaon ...	17	244·0	3·1	30·0	277·1	166·4	15·2	76·4	19·1
7 Gulumb ...	22	242·0	253·4	25·2	520·6	224·3	2·0	195·8	98·5
8 Kalangwadi...	21	234·9	34·5	33·5	302·9	260·5	1·7	25·5	15·2
9 Kavtha ...	10	108·8	13·4	31·7	153·9	141·2	0·3	1·2	11·2
10 Kenjal ...	25	191·3	23·4	29·2	243·9	208·9	2·9	24·0	8·1
11 Kikli ...	10	51·7	14·9	13·7	80·3	79·0	...	...	1·3
12 Lohara ...	14	94·1	30·5	24·4	149·0	115·6	3·4	19·0	11·0
13 Menavli ...	20	142·3	90·2	49·7	282·2	172·9	...	81·9	27·4
14 Ojharda ...	18	206·6	4·3	34·0	244·9	219·1	0·2	21·2	4·4
15 Panda ...	15	101·1	8·3	18·9	128·3	117·1	2·1	7·5	1·6
16 Panchwad ...	23	137·1	24·2	17·2	178·5	162·1	2·0	11·8	2·6
17 Pasarni ...	36	286·3	77·9	63·4	427·6	343·9	...	69·7	14·0
18 Surul ...	28	351·9	16·9	52·5	421·3	232·1	...	139·3	49·9
19 Udtara ...	17	187·8	20·2	14·0	222·0	189·7	8·2	21·6	2·5
20 Virmada ...	13	88·6	9·9	2·8	101·3	96·3	1·2	2·4	0·9
21 Wai ...	38	178·9	192·9	114·5	486·3	379·6	6·5	84·3	15·9
Total ...	438	3701·1	1062·6	795·1	5558·8	4101·8	49·8	1060·5	346·7
Average per farm	...	8·5	2·4	1·8	12·7	9·4	0·1	2·4	0·8

as being owned. A similar division of the farm area between owned and tenanted is to be found in such diversely situated villages as Dehgaon, Kalangwadi, Kenjal, Panda, Surul, Udtara and Virmada. No special feature is also revealed by an examination of villages according to whether cash renting or crop-share renting was dominant amongst them.

2. Distribution of Farm Area

Table No. 11 shows the distribution of the cultivated area under various types of lands and under various crops. The average cultivated area per farm was 9·5 acres; 1·8 acres of this was however, on an average, cropped twice. The average number of crop acres was, therefore, 11·3. This may initially be divided into three classes; irrigated, dry and rice land. As, in defining the limits of our tract, we left out the heavy rainfall tract of the west, very little rice land was noted in the farms that were surveyed. The average area per farm was only 0·1 acre. In fact, no rice was to be found cultivated in the majority of the villages included; and it was only in the westernmost villages of Pasarni, Menavali, Chandak and Bopardi that any significant acreage under rice was recorded. Almost a tenth of the total crop acres were irrigated. There is, however, to be found in this tract considerable variation in the extent to which irrigation facilities are available during the year. We have, therefore, further divided irrigated lands into four sub-classes. A small proportion of land— 0·2 acres per farm—enjoyed facilities of almost perennial irrigation. Specially high acreage in this class is to be noted in the centrally situated Kavtha; other villages having good resources of perennial irrigation are Kenjal, Kikli, Panda, and Bavdhan. It should be noted in this connection that the exclusion, for purposes of this table, of farmers who had orchards or betel-vines has affected the data for some villages, especially Wai and to a certain extent Bavdhan. A reference to table No. 2 will show that almost half the farmers for whom schedules had been collected in Wai have been omitted from these tables because of this consideration. Almost all these farmers possessed irrigation facilities and grew the richer crops. The result of the omission has been to show Wai as having little irrigation facilities and as being a place with a predominantly dry cultivation, which is far from being the case. For the purposes of these tables it has, therefore, to be remembered that the data are presented for a selected group of Wai farmers only and that they ignore the important garden and orchard cultivation of that place. Next to facilities of perennial irrigation we have placed two

TABLE No. 11

Distribution of Cultivated Area in Acres. (1937-38.)

Village	No. of farms	Total crop acres	Irrigated					Rice land	Dry	Area cropped twice	Net cultivated area	Under important crops.									
			10–12 Months	6–8 Months	4–6 Months	Twice or thrice in the year	Total					Jowar (Rabi)	Bajri	Wheat	Spelt Wheat	Gram.	Turmeric	Potatoes.	Groundnut	Jowar (Kharif)	Peas
1 Asla	23	286·7	...	0·3	1·8	1·1	3·2	0·3	283·2	35·5	251·2	92·0	62·0	2·9	1·8	31·9	...	...	50·5	41·2	...
2 Bavdhan	31	337·4	6·8	2·7	5·5	18·4	33·4	...	304·0	45·3	292·1	101·5	49·4	8·3	4·8	33·4	5·3	5·0	53·5	18·1	3·8
3 Bhuinj	27	363.7	4·5	2·0	3·3	9·4	19·2	...	344·5	73·9	289·8	143·6	96·2	7·7	3·0	60·3	2·6	1·4	38·6	3·3	...
4 Bopardi	25	238·2	0·9	0·6	0·4	14·9	16·8	3·0	218·4	65·8	172·4	111·7	19·1	3·6	0·4	2·6	0·9	...	33·6	...	30·3
5 Chandak	25	271·2	0·5	0·1	4·5	41·8	46·9	14·2	210·1	49·9	221·3	100·3	84.4	7·6	0·5	16·0	...	11·6	18·5	11·2	3·3
6 Dehgaon	19	244·7	2·4	0·3	4·2	24·6	31·5	0·8	212·4	52·5	192·2	98·1	75·3	7·8	2·9	33·8	2·1	3·7	14.5	...	0·3
7 Gulumb	26	334·5	0·9	0·7	4·8	45·1	51·5	0·8	282·2	61·9	272·6	138·2	119·2	7·2	...	36·8	0·8	13·5	11·3	1·7	...
8 Kalang-wadi	21	289·9	1·0	...	0·1	...	1·1	...	288·8	22·4	267·5	139·9	92·4	0·5	...	17·4	1·0	...	36·7	...	...
9 Kavtha	35	379·3	27·1	0·6	21·9	30·3	79.9	...	299·4	46·0	333·3	132·0	114·2	0·3	20·5	24·4	19·8	0·3	33·9	22·8	...
10 Kenjal	34	342·5	10·8	2·1	5·8	46·3	65.0	...	277·5	53·8	288·7	120·5	103·0	12·3	3·4	31·5	8·2	3·2	41·0	4·1	0·5
11 Kikli	36	380·5	10·1	...	4·2	11·8	26·1	...	354·4	30·4	350·1	186·1	118·7	2·2	1·8	13·6	9·4	9·5	35·9	...	...
12 Lohara	15	161·5	4·8	0·2	4·2	0·4	9·6	0·3	151·6	22·4	139·1	69·7	28·0	0·3	4·0	1·2	4·8	0·3	19·6	10·5	6·4
13 Menavli	23	226·1	...	0·1	0·2	1·8	2·1	3·7	220·3	36·8	189·3	64·0	47·5	2·1	...	5·0	...	0·9	23·1	48·4	10·3
14 Ojharda	31	453·6	2·3	8·5	3·9	20·7	35·4	...	418·2	86·0	367·6	170·7	107·8	9·8	3·3	66·4	1·8	6·0	73·0	0·9	...
15 Panda	17	196.0	6·3	...	0·1	27·6	34·0	...	162·0	27·0	169·0	66·3	52·2	5·4	0·1	22·1	5·6	...	16·0	20·5	...
16 Panch-wad	23	195·5	2·0	1·4	1·5	8·9	13·8	...	181·7	24·2	171·3	88·4	38·0	2·3	1·0	18·1	1·6	...	34·7	3·5	0·1
17 Pasarni	39	447·7	...	...	...	30·8	30·8	7·8	409·1	90·2	357·5	89·0	116·0	11·8	...	27·5	...	0·5	31·5	93·4	28·0
18 Surul	27	274·2	4·4	1·1	11·4	38·1	55·0	...	219·2	50·4	223·8	105·9	88·2	1·3	9·4	24·4	4·4	8·0	27·1	2·4	...
19 Udtara	22	260·0	1·1	1·1	2·8	1·7	6·7	...	253·3	40·3	219·7	104·1	20·5	1·9	2·4	35·3	0·6	0·2	59·7	3·8	...
20 Virmada	22	174·5	0·4	0·8	2·6	...	3·8	0·7	170·0	16·1	158·4	84·7	20·5	2·4	2·2	12·9	0·4	...	34·6	2·1	...
21 Wai	36	413·4	0·2	0·2	3·8	18·6	22·8	...	390·6	47·1	366·3	134·7	55·4	7·1	0·5	18·1	0·2	0·4	85·6	80·5	6·2
Total	557	6,271·1	86·5	22·8	87·0	392·3	588·6	31·6	5,650·9	977·9	5,293·2	2,341·4	1,508·0	104·8	62·0	532·7	69·5	64·5	772·9	368·4	89·2
Average per farm	...	11·3	0·2	...	0·2	0·7	1·1	0·1	10·1	1·8	9·5	4·2	2·7	0·2	0·1	1·0	0·1	0·1	1·4	0·7	0·2

TABLE No. 11-A

Distribution of Cultivated Area in Acres. (1936-37)

Village	No. of farms	Total crop acres	Irrigated					Rice land	Dry	Area cropped twice	Net cultivated area	Under Important crops									
			10—12 months	6—8 months	4—6 months	Twice or Thrice in the year	Total					Jowar (Rabi)	Bajri	Wheat	Spelt Wheat	Gram	Turmeric	Potatoes	Groundnut	Jowar (kharif)	Peas
1 Asla	22	286·0	...	0·2	1·7	2·2	4·1	...	281·9	44·3	241·7	95·9	69·5	4·5	1·7	38·7	...	0·8	32·2	33·9	...
2 Bavdhan	18	182·2	8·2	2·9	0·9	20·1	32·1	...	150·1	25·6	156·6	91·2	24·6	9·2	0·7	15·9	4·9	2·4	18·5	11·9	2·4
3 Bhuinj	29	398·5	6·9	1·1	2·4	7·9	18·3	...	380·2	82·7	315·8	141·8	121·1	5·2	2·1	73·6	2·9	3·3	28·5	5·7	0·7
4 Bopardi	24	215·4	1·4	0·7	0·5	9·7	12·3	1·8	201·3	64·2	151·2	97·3	20·5	3·8	0·5	2·9	1·5	1·9	21·5	4·7	34·0
5 Chandak	18	159·1	0·9	0·2	0·9	25·1	27·1	1·2	130·8	31·8	127·3	30·1	85·1	7·3	...	14·9	...	7·0	8·6	2·2	1·4
6 Dehgaon	17	202·2	1·8	0·1	0·6	10·4	12·9	0·1	189·2	35·8	166·4	87·9	61·5	3·4	0·3	28·2	1·7	2·1	10·0	...	...
7 Gulumb	22	254·4	3·6	0·5	3·1	31·6	38·8	...	215·6	30·1	224·3	86·8	119·2	6·3	0·1	13·1	1·4	12·9	9·8	0·3	0·6
8 Kalangwadi	21	270·6	1·6	...	0·4	1·5	3·5	...	267·1	10·1	562·0	137·5	99·8	...	0·4	3·5	1·6	1·5	116·6	...	0·4
9 Kavtha	10	155·8	7·8	...	4·9	11·3	24·0	...	131·8	14·6	141·2	47·6	53·8	...	4·9	9·7	7·8	...	9·2	21·5	...
10 Kenjal	25	235·7	10·0	1·5	0·8	30·8	43·1	...	192·6	26·8	208·9	90·9	75·9	4·8	0·7	18·6	5·9	1·5	27·2	2·5	...
11 Kikli	10	189·7	3.1	0·1	0·7	2·0	5·9	...	83·8	10·7	79·0	33·3	30·2	1·0	0·1	7·3	2·6	2·3	38·3	...	...
12 Lohara	14	143·1	4·1	...	3·5	0·9	8·5	1·1	133·5	27·5	115·6	54·9	18·5	1·0	3·0	...	3·7	0·5	21·3	7·2	12·7
13 Menavli	20	209·6	...	...	...	1·1	1·1	3·1	205·4	36·7	172·9	62·2	40·9	1·5	...	5·8	...	0·9	15·9	48·6	10·2
14 Ojharda	18	286·6	3·2	4·5	1·4	12·5	21·6	...	265·0	67·5	219·1	99·9	72·5	7·4	0·8	59·4	2·2	5·9	29·3	...	1·0
15 Panda	15	138·9	4·5	0·5	0·1	12·6	17·7	...	121·2	21·8	117·1	74·4	42·5	1·8	0·1	19·7	3·0	0·6	6·8	5·0	...
16 Panchwad	23	192·2	1·4	0·8	0·7	4·9	7·8	...	184·4	30·1	162·1	73·9	41·6	2·9	0·8	27·7	1·1	...	31·6	5·7	0·4
17 Pasarni	36	422·6	...	0·2	0·2	24·5	24·9	7·3	390·4	78·7	343·9	86·2	112·7	4·1	0·2	23·4	...	...	30·2	88·3	24·6
18 Surul	28	278·3	5·6	0·3	7·0	24·7	37·6	...	240·7	46·[illegible]	232·1	112·2	89·5	1·8	6·1	27·8	4·4	6·0	27·1	0·9	...
19 Udtara	17	232·7	0·9	0·4	2·4	0·4	4·1	...	228·6	43·0	189·7	81·2	22·5	2·4	2·1	39·0	0·5	0·5	40·3	4·9	...
20 Virmada	13	112·4	0·5	...	0·7	0·1	1·3	0·5	110·6	15·6	96·8	43·9	20·4	1·4	0·7	14·7	0·5	...	33·9	0·2	1·7
21 Wai	38	435·6	1·7	0·5	4·0	8·3	14·5	...	421·1	56·0	379·6	123·9	79·3	1·6	...	37·6	0·7	3·3	69·1	82·9	9·3
Total	438	4901·6	67·2	14·5	36·9	242·6	361·2	15·1	4525·3	799·8	4,101·8	1726·0	1201·6	71·4	25·3	481·5	46·4	53·4	625·9	326·4	99·4
Average per farm		11·2	0·2	...	0·1	0·6	0·9	...	10·3	1·8	9.4	3·9	3·0	0·2	0·1	1·1	0·1	0·1	1·4	0·7	0·2

intermediate classes -- those enjoying irrigation from for six to eight months and from for four to six months. Broadly, these intermediate facilities are largely available in those villages where there are sources of perennial irrigation also. There are, however, some villages, like Ojharda and Surul where the intermediate facilities are important, without perennial irrigation being available to any considerable degree. The area under this intermediate type of irrigation was somewhat over 0·2 acre per farm. The largest irrigated area-- 0·7 acre per farm — was, however, to be found in the last class. This is the class, in which the land gets irrigated only three or four times during the year. This type was fairly well-distributed all over the tract. It may be noticed that in a number of villages irrigation is of very little or almost no importance. Chief among such villages are Kalangwadi, Menavli, Asla, Virmada and Udtara.

The other part of this table shows the distribution of the cropped acres among the principal crops cultivated in the region. Over two-thirds of the area is occupied by the staple grains jowar and bajri. The average acres per farm were jowar *rabi*, 4·2 acres, jowar *kharif*, 0·7 acre and bajri, 2·7 acres. In most of the area under jowar and bajri a small proportion of some other crop, usually a pulse crop, is also sown. The cereal area, therefore, represents mostly the cereal and the pulse area together. Next in importance were, the *kharif* crop groundnut and the *rabi* crop gram, the acreages under them being 1·4 and 1·0 per farm respectively. Then followed at a long distance wheat (ordinary and spelt), potatoes, peas and turmeric.

There are naturally large variations in the importance of the various crops from village to village. Even *rabi* jowar which may be truly reckoned as the staple crop of the tract is much less important in western villages like Pasarni and Menavli than elsewhere. *Kharif* jowar is specially important in western villages like Pasarni, Wai and Menavli where the *kharif* rainfall is sufficient for growing it; whereas it is altogether absent in eastern villages like Dehgaon, Kikli and Kalangwadi where the *kharif* rainfall is smaller. Asla and Panda which geographically occupy an intermediate position naturally occupy the same intermediate position in respect of their acreages under this crop. The importance of bajri varies even more; but this variation in importance does not seem to follow any clear geographical demarcation. The facts regarding crop practices are more significantly brought out in table No. 14 showing crop combinations. The above table further reveals certain cases of marked localisation, such as that of peas in the western villages of Bopardi, Lohara, Pasarni and Menavli; of potatoes along the northern and eastern hillsides in Gulumb, Chandak, Surul, Dehgaon, Kikli, etc.; and of turmeric, which is concentrated in well-irrigated villages like Kavtha, Kenjal and Kikli.

3. Investment

Table No. 12 shows the total investment of the farmers and its classification. The value of the real estate is found to form the overwhelmingly dominant portion (93·5 p. c.) of the value of the total investment; and real estate values are composed almost entirely of land values. The average value of farm buildings, i. e. barns, stables, etc. represented only a very small amount. This was Rs. 63 per farm i. e. 2 p. c. of the total investment. The value of the owned land in an average farm came up to very near Rs. 2,500. Of the total capital assets of the farmer, land values are seen to form more than nine-tenths. The other portions of the investment of the farmer consist of his live-stock and his tools and implements. The average value per farm of these two classes of investments was Rs. 125 and Rs. 52 respectively.

There are, as was to be expected, large variations in the average investment in land, from village to village. The villages of the west like Bopardi, Menavli and Pasarni show very low levels of values of average holdings of land. Similar is the case with the group of Wai farmers included in these tables. The highest levels of the values of average land holdings were, on the other hand, shown by the centrally situated and well-irrigated village — Kavtha. High levels also characterise the other central villages — Panda and Ojharda. Irrigation facilities are, however, not always necessary for a high value of the average holding of land. This is shown most clearly in Udtara. This village possesses almost no irrigation facilities; it contains, however, perhaps the richest lands in the tract.

The variations in the values of other types of investment were not very wide. The complement of tools and other equipment is mostly uniform and variations within small limits follow chiefly the intensity of agriculture. An absence of wide variations from village to village also marked the value of the livestock owned by the average farmer. Owning at least one bullock was a criterion laid down by us for inclusion of a farmer in the survey; hence a minimum valuation in this respect was assured in the data. The tract surveyed is, again, one in which well-irrigation is not so important as channel-irrigation. Hence bullock-owning and irrigation are not here closely connected. The detailed variations in the types of livestock owned are brought out fully in the next table.

TABLE No. 12

Investment (1937-38)

Village	No. of Farms	REAL ESTATE			Imple-ments	Live-stock	Grand Total
		Land	Build-ings etc.	Total			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	23	54,510	1,155	55,665	745	2,704	59,114
2 Bavdhan ...	31	63,150	1,876	65,026	1,470	3,668	70,164
3 Bhuinj ...	27	72,379	1,118	73,497	1,416	3,169	78,082
4 Bopardi ...	25	25,324	673	25,997	1,105	2,792	29,894
5 Chandak ...	25	61,260	1,725	62,985	1,432	4,119	68,536
6 Dehgaon ...	19	74,510	972	75,482	1,035	2,386	78,903
7 Gulumb ...	26	69,042	2,609	71,651	1,821	3,166	76,638
8 Kalangwadi ...	21	44,788	1,464	46,252	622	1,841	48,715
9 Kavtha ...	35	127,810	2,093	129,903	2,244	4,913	137,060
10 Kenjal ...	34	99,961	1,126	101,087	1,912	4,711	107,710
11 Kikli ...	36	83,055	3,031	86,086	1,707	3,887	91,680
12 Lohara ...	15	30,372	1,121	31,493	842	2,111	34,446
13 Menavli ...	23	28,143	1,301	29,444	987	2,227	32,658
14 Ojharda ...	31	101,484	1,239	102,723	1,423	3,271	107,417
15 Panda ...	17	59,207	452	59,659	1,027	1,829	62,515
16 Panchwad ...	23	46,250	1,145	47,395	1,407	2,747	51,549
17 Pasarani ...	39	71,339	2,767	74,106	2,066	5,256	81,428
18 Surul ...	27	75,567	1,116	76,683	1,458	2,852	80,993
19 Udtara ...	22	100,109	2,798	102,907	1,009	2,710	106,626
20 Virmada ...	22	48,149	1,152	49,301	934	2,224	52,459
21 Wai ...	36	53,570	3,870	57,440	2,058	7,055	66,553
Total ...	557	1,389,979	34,803	1,424,782	28,720	69,638	1,523,140
Average ...	...	2,495·4	62·5	2,557·9	51·6	125·0	2,734·5
Percentage ...	...	91·2	2·3	93·5	1·9	4·6	100

TABLE No. 12-A

Investment (1936-37)

Village	No. of Farms	Real Estate			Imple-ments	Live-stock	Grand Total
		Land	Build-ings etc.	Total			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	22	52,936	1,179	54,115	835	2,510	57,460
2 Bavdhan ...	18	39,546	864	40,410	1,154	2,138	43,702
3 Bhuinj ...	29	81,353	1,275	82,628	1,904	2,994	87,526
4 Bopardi ...	24	24,885	805	25,690	1,207	2,481	29.378
5 Chandak ...	18	34,364	1,061	35,425	1,041	1,654	38,120
6 Dehgaon ...	17	59,421	492	59,913	760	1,842	62,515
7 Gulumb ...	22	71,578	2,239	73,817	2,273	2,879	78,969
8 Kalangwadi ...	21	44,583	1,338	45,921	739	1,671	48,331
9 Kavtha ...	10	52,951	516	53,467	788	1,548	55,803
10 Kenjal ...	25	73,203	929	74,132	1,532	3,150	78,814
11 Kikli ...	10	21,049	650	21,699	427	835	22,961
12 Lohara ...	14	23,891	1,105	24,996	773	1,746	27,515
13 Menavli ...	20	25,057	1,330	26,387	1,043	2,063	29,493
14 Ojharda ...	18	78,729	695	79,424	1,205	2,337	82,966
15 Panda ...	15	42,856	421	43,277	857	1,186	45,320
16 Panchwad ...	23	43,015	1,191	44,206	1,537	2,618	48,361
17 Pasarni ...	36	68,317	2,683	71,000	2,105	4,253	77,358
18 Surul ...	28	76,717	1,237	77,954	1,809	2,840	82,603
19 Udtara ...	17	93,861	2,594	96,455	937	2,151	99,543
20 Virmada ...	13	33,057	803	33,860	594	1,242	35,696
21 Wai ...	38	61,285	3,891	65,176	2,644	6,855	74,675
Total ...	438	1,102,654	27,298	1,129,952	26,164	50,993	1,207,109
Average per farm ...	...	2,517·5	62·3	2,579·8	59·7	116·4	2,755·9
Percentage ...	...	91·3	2·3	93·6	2·2	4·2	100

4. Livestock

Table No. 13 shows the ownership of the different types of livestock by farmers in the individual villages. It should be noted that the units in the table are natural units and not units converted or adjusted according to any scale. The fraction ½ appears in the table because the numbers are the averages of the two inventories. No comment need be offered on the average number of bullocks owned. The number of bullocks owned was the basis in the choice of our sample; hence the character of this information was really predetermined to a certain extent. Attention may, however, be drawn to the number of useless bullocks (i. e. either maimed or aged bullocks) maintained, which we have tabulated separately. No importance can be attached to the figures of variations between villages in this instance; but it should be noted that the proportion of useless to working bullocks in the tract, as a whole, works out at 1:16. The similar proportion in the case of cows is 1:6. The variations in the ownership of livestock other than bullocks, are fairly wide but they do not seem to follow any well-defined line. To give one illustration, while a low average holding of cows in Surul and Panda is associated with comparatively low holdings of other types of livestock also, in the case of Udtara it is associated with a more than average holding of other types of live stock. The figure that can be most obviously interpreted in the table is that regarding buffalo-owning in Wai. This is clearly a result of the demand for milk in that town. It will be seen that the holding of livestock is very small in the tract as a whole. The distribution of the ownership of sheep and goats shows some peculiarities. While goats have been recorded in the sample in every village, sheep are confined to eight villages. This is to be interpreted chiefly as being due to the difference in the average unit of the ownership of goats and sheep. The absence of sheep in the sample in some villages does not mean that no sheep are to be found in those villages. Goats are owned, to a large extent, singly or by twos or threes, and by a large number of farmers. Hence they got recorded at least to a small extent in every village. Sheep, on the other hand, are owned by only an occasional farmer and are owned usually in flocks. Hence they occur in the sample in only a few cases; but where they do occur, the number recorded was comparatively large. The average number of units owned was very small in the poultry group also. The distribution of the number does not also reveal any significant associations.

5. Crop Combinations

Table No. 14 classifies the farmers into a set of twelve classes based on the receipts from the different crops obtained by each farmer.

TABLE No. 14

Crop Combinations. (1937-38)

Village	No. of Farms.	Jowar, Bajri. 1	J. B. + Groundnut 2	J. B. + Wheat & Gram 3	J.B. + G. nut + Wheat & Gram 4	J. B. + Irrigated Crops. 5	J. B. + Irriga. Crops + Groundnut 6	J. B. + Irriga. Crops + Wheat & Gram 7	J. B. + Irriga. Crops + G. nut + Wheat & Gram 8	Turmeric above 40% 9	Potatoes above 40% 10	Sugarcane above 40% 11	Any two or three (T.P. & S.) together above 40% 12
1 Asla	23	...	18	1	1	...	3	...	...	...	...	...	...
2 Bavdhan	31	1	5	...	7	1	13	...	1	2	...	1	...
3 Bhuinj	27	1	12	...	2	6	5	1	...	...	...	...	...
4 Bopardi	25	...	19	1	...	...	5	...	...	...	...	...	...
5 Chandak	25	1	5	...	...	5	10	...	1	...	3	...	...
6 Dehgaon	19	...	2	2	1	5	4	3	1	...	...	...	1
7 Gulumb	26	7	3	2	...	5	2	3	1	...	1	...	2
8 Kalangwadi	21	1	18	...	...	2	...	...	...	...	...	...	...
9 Kavtha	35	1	...	...	...	4	5	...	...	14	...	...	11
10 Kenjal	34	...	4	...	3	3	12	...	2	4	...	...	6
11 Kikli	36	3	17	...	...	5	5	...	...	5	1	...	...
12 Lohara	15	...	3	...	...	3	8	...	...	1	...	...	...
13 Menavli	23	4	17	...	...	...	2	...	...	...	...	...	...
14 Ojharda	31	3	10	1	4	1	11	...	1	...	...	...	...
15 Panda	17	1	...	...	2	3	6	...	1	3	...	...	1
16 Panchwad	23	1	18	...	...	1	2	...	...	1	...	...	...
17 Pasarni	39	13	19	2	3	...	2	...	...	...	..	...	...
18 Surul	27	1	6	...	1	10	6	...	...	...	...	...	3
19 Udtara	22	...	17	...	2	...	3	...	...	...	...	...	...
20 Virmada	22	1	17	...	1	...	3	...	...	...	...	...	...
21 Wai	36	1	34	...	1	...	...	...	...	...	...	...	...
Total	557	40	244	9	28	54	107	7	8	30	5	1	24
Percentage	100	7·2	43·8	1·6	5·2	9·7	19·0	1·3	1·4	5·4	0·9	0·2	4·3

tract, namely Asla, Panchwad, Udtara, Virmada and Kalangwadi. It holds a similar position in the Wai sample included in these tables. If the numbers under class 1 and class 2 are added together they account for more than 85 p.c. of the farmers recorded in the two villages in the extreme west viz. Pasarni and Menavli. Class 2 is also the most important single class in Bopardi, Bhuinj and Kikli. At the other extreme are the well irrigated central villages — Kavtha, Kenjal, and Panda — which show a very small number in either of these two classes. This is also the case with some of the eastern and northern hillside villages possessing comparatively good irrigation facilities like Lohara, Chandak and Dehgaon; Gulumb, while showing a large number under class 1, shows a very small number in class 2. The rest of the villages do not reveal any pronounced characteristic one way or the other. Classes 3 and 4 represent very small numbers and require no other comment, except that Bavdhan shows an appreciable number in class 3. Class 5 comprises a fairly large number and is represented in almost every village having irrigation facilities. In Surul and Dehgaon this class has a larger number of farmers falling within it than any other; and in Gulumb, a number next in importance to the largest class in that village i.e. class I. Class 6 is numerically the second most important class. The strength of the two classes 5 and 6 shows the considerable importance to a large number of farmers in this tract of the group of irrigated crops. Class 6 is the most important single class in Bavdhan, Chandak, Kenjal, Lohara, Panda and Ojharda. The numbers in classes 7 and 8 are too small to require comment. Nearly 11 p.c. of the total number of farmers fall within the last four groups, in which money crops dominate. Of the four groups only two are important. There are not many, of what may be called, sugarcane or potato farmers in the tract. There are, however, a number of turmeric farmers. These are dominant in Kavtha where they form the most important single class and are also important in Kenjal, Kikli and Panda. The other important class is the mixed class—12. This also is important only in two villages — Kavtha and Kenjal.

6. Livestock Products

Table No. 15 shows the income obtained by the farmers from livestock products of various kinds and the classification of that income into " sold " and " used at home." The total income from livestock products during the year was valued at Rs. 60 per farm. Of this Rs. 43 represented products utilised in the farm business or consumed by the operator's family. Rs 16 represented products sold and Re. 1 represented value of livestock born during the year, such as pullets etc. Of livestock products only two, milk and manure, are of major importance. Among livestock products sold the only important product was buffalo-milk. Livestock products sold formed altogether 26·1 p. c. of the total income from livestock products, while buffalo-milk sold formed 23·1 p. c. of the total income from livestock products. It is only in the case of buffalo-milk that sales exceed, however slightly, home consumption. But in this case it is necessary to remember that the figures are affected by the urban centre Wai. Nearly 40 p. c. of the total receipts from the sales of buffalo-milk are recorded in Wai, while that centre accounts for less than 10 p. c. of the value of the total buffalo-milk consumed at home. Wai also provides a market for milk from near-by villages like Bavdhan, Pasarni, Bopardi etc. There is a minor demand for milk in bigger villages like Kavtha and Bhuinj. Milk from Udtara finds a market at Satara which is 10 miles away. Buffalo-milk is undoubtedly the one important salable commodity, but receipts from these sales naturally depend a great deal on the means of communication. Thus, while in most villages the income from these sales is substantial, it is very small in villages worst served by roads such as Kikli, Dehgaon, Gulumb and Chandak. Sales of cow's milk are very small in comparison with the sales of buffalo-milk and no sales of goat's milk by farmers in the sample were recorded.

Manure produced, as is to be expected, was almost entirely used in the farm business itself. Farmers in only seven villages were recorded as having sold any part of their manure; and the value of such sales was less than 3 p. c. of the value of the total manure produced. The value of the total manure produced formed 37·7 p. c. of the value of all livestock receipts.

Eggs occupy a place far inferior, in livestock receipts, to milk and manure. The value of egg production formed 2·5 p. c. of the total value of all livestock receipts; roughly a third of the total production was sold and the remaining two-thirds consumed at home. No other livestock product is of sufficient importance to require comment.

7. Crop Receipts

Table No. 16 shows the total receipts of the farmers from crops and their distribution among all the important crops. The crop receipts of the average farmer were valued at Rs. 317. The variation of the average total receipts among villages will be noticed later. Here we shall first draw attention to the composition of the average figure.

TABLE

Receipts from Live-Stock

Village	No. of farms	MILK								
		Buffaloes' milk		Cows' milk		Goats' milk		Total		Total milk
		Sales	Family use	Sales	Family use	Sales	Family use	Sales	Family use	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	23	148	298	...	244	...	21	148	563	711
2 Bavdhan ...	31	364	175	20	120	...	...	384	295	679
3 Bhuinj ...	27	99	293	52	105	...	16	151	414	565
4 Bopardi ..	25	296	192	...	200	...	3	296	395	691
5 Chandak ...	25	79	400	17	259	...	82	106	741	847
6 Dehgaon ...	19	53	254	...	25	...	65	53	344	397
7 Gulumb ...	26	11	531	...	165	...	36	11	732	743
8 Kalangwadi	21	70	112	...	129	...	7	70	248	318
9 Kavtha ...	35	306	904	...	63	...	55	306	1,022	1,328
10 Kenjal ...	34	304	566	...	109	...	103	304	778	1,082
11 Kikli ...	36	50	453	...	173	...	...	50	626	676
12 Lohara ...	15	69	100	32	188	...	...	101	288	389
13 Menavli ...	23	360	29	...	57	...	...	360	86	446
14 Ojharda ...	31	412	400	...	120	...	...	412	520	932
15 Panda ...	17	104	227	...	36	...	25	104	288	392
16 Panchwad ...	23	680	373	...	100	...	29	680	502	1,182
17 Pasarni ...	39	347	298	...	195	...	...	347	493	840
18 Surul ...	27	233	432	4	32	...	...	237	464	701
19 Udtara ...	22	434	558	...	64	...	20	434	642	1,076
20 Virmada ...	22	79	383	...	17	...	10	79	410	489
21 Wai ...	36	3,191	670	111	466	...	5	3,302	1,141	4,443
Total ...	557	7,699	7,648	236	2,867	...	477	7,935	10,992	18,927
Average per farm	...	13·8	13·7	0·4	5·1	...	0·9	14·2	19·7	33·9
Per cent ...	...	23·1	23·0	0·7	8·6	...	1·5	23·8	33·1	56·9

No. 15

Products (1937-38)

EGGS			MANURE			HIDES			Miscellaneous (wool, breeding fees etc.)	TOTAL		Livestock born during the year	Total live-stock products
Sales	Family use	Total	Sales	Farm use	Total manure	Sales	Farm use	Total hides		Sales	Farm use or family use		
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
29	41	70	50	513	563	6	...	6	10	243	1.117	42	1,402
14	39	53	...	588	588	...	...	...	...	398	922	...	1,320
49	45	94	...	668	668	4	...	4	...	204	1,127	22	1,353
...	...	...	35	333	368	...	...	...	...	331	728	15	1,074
14	22	36	32	446	478	4	...	4	5	161	1,209	73	1,443
16	13	29	...	511	511	13	4	17	...	82	872	59	1,013
...	21	21	28	709	737	9	8	17	6	54	1,470	86	1,610
17	18	35	...	478	478	...	...	...	...	87	744	19	850
...	4	4	...	1,062	1,062	...	8	8	...	306	2,096	45	2,447
2	3	5	70	708	778	5	8	13	12	393	1,497	140	2,030
15	63	78	75	931	1,006	12	...	12	4	156	1,620	33	1,809
...	4	4	...	294	294	...	...	...	...	101	586	33	720
...	8	8	...	277	277	4	...	4	...	364	371	...	735
57	45	102	...	672	672	...	...	...	...	469	1,237	...	1,706
16	16	32	...	266	266	...	4	4	...	120	574	23	717
13	61	74	...	469	469	10	...	10	...	703	1,032	14	1,749
...	6	6	...	668	668	5	...	5	...	352	1,167	3	1,522
2	19	21	...	502	502	...	...	...	...	239	985	...	1,224
13	64	77	...	702	702	25	...	25	36	508	1,408	112	2,028
...	16	16	...	594	594	...	...	...	...	79	1,020	33	1.132
20	67	87	30	852	882	...	...	...	...	3,352	2,060	19	5,431
277	575	852	320	12,243	12,563	97	32	129	73	8,702	23,842	771	33,315
0·5	1·0	1·5	0·6	22·0	22·6	0·2	0·1	0·3	0·1	15·6	42·8	1·4	59·8
0·8	1·7	2·5	1·0	36·7	37·7	0·3	0·1	0·4	0·2	26·1	71·6	2·3	100

TABLE

Receipts from Live-Stock

Village	No. of farms	MILK								
		Buffaloes' milk		Cows' milk		Goats' milk		Total		Total milk
		Sales	Family use	Sales	Family use	Sales	Family use	Sales	Family use	
		Rs	Rs	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	22	148	205	...	162	...	19	148	386	534
2 Bavdhan ...	18	203	155	88	191	...	14	291	360	651
3 Bhuinj ...	29	196	424	...	275	...	6	196	705	901
4 Bopardi ...	24	263	314	...	95	...	4	263	413	676
5 Chandak ...	18	43	211	14	140	...	27	57	378	435
6 Dehgaon ...	17	15	72	19	79	...	26	34	177	211
7 Gulumb ...	22	...	626	...	97	...	20	...	743	743
8 Kalangwadi	21	28	151	...	41	...	9	28	201	229
9 Kavtha ...	10	175	293	...	29	...	7	175	329	504
10 Kenjal ...	25	152	492	...	69	...	45	152	606	758
11 Kikli ...	10	30	118	...	13	...	...	30	131	161
12 Lohara ...	14	21	44	...	81	...	5	21	130	151
13 Menavli ...	20	459	118	...	128	...	...	459	246	705
14 Ojharda ...	18	125	218	18	67	...	...	143	285	428
15 Panda ...	15	15	15	...	...	...	3	15	18	33
16 Panchwad ...	23	902	458	...	26	...	23	902	507	1,409
17 Pasarni ...	36	281	374	...	184	...	...	281	558	839
18 Surul ...	28	406	490	11	35	...	...	417	525	942
19 Udtara ...	17	311	543	...	...	...	6	311	549	860
20 Virmada ...	13	15	211	...	23	...	4	15	238	253
21 Wai ...	38	3,368	1,163	161	326	...	14	3,529	1,503	5,032
Total ...	438	7,156	6,695	311	2,061	...	232	7,467	8,988	16,455
Average per farm	...	16·3	15·2	0·7	4·8	...	0·5	17·0	20·5	37·5
Per cent ...	...	26·4	24·6	1·1	7·6	...	0·9	27·5	33·1	60·6

No. 15-A

Products (1936-37)

EGGS			MANURE			HIDES			Misc. (wool, breeding fees etc.)	TOTAL		Livestock born during the year	Total livestock products
Sales	Family use	Total eggs	Sales	Farm use	Total manure	Sales	Farm use	Total hides		Sales	Family use		
Rs.	Rs.	Rs,	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
11	32	43	40	487	527	5	...	5	16	220	905	56	1,181
...	28	28	...	334	334	5	...	5	...	296	722	...	1,018
48	47	95	...	711	711	...	...	...	...	244	1,463	9	1,716
...	...	...	20	312	332	...	...	...	...	283	725	30	1,038
4	10	14	4	263	267	...	...	...	...	65	651	21	737
2	12	14	...	383	383	...	12	12	...	36	584	20	640
5	39	44	6	696	702	...	...	...	...	11	1,478	42	1,531
...	25	25	...	449	449	...	...	...	...	28	675	8	711
...	2	2	...	324	324	...	4	4	...	175	659	5	839
2	3	5	40	505	545	...	...	...	8	202	1,114	89	1,405
...	27	27	35	228	263	4	...	4	...	69	386	...	455
...	2	2	30	243	273	...	...	...	...	51	375	16	442
...	10	10	...	291	291	...	...	...	...	459	547	1	1,007
34	23	57	...	466	466	...	...	...	...	177	774	...	951
15	15	30	...	212	212	8	...	8	...	38	245	8	291
16	57	73	...	468	468	...	...	...	...	918	1,032	12	1,962
...	6	6	...	638	638	4	...	4	...	285	1,202	...	1,487
2	8	10	...	489	489	...	...	...	...	419	1,022	...	1,441
4	49	53	...	573	573	...	...	...	34	349	1,171	96	1,616
...	16	16	...	382	382	...	...	...	...	15	636	16	667
51	41	92	45	830	875	...	...	...	...	3,625	2,374	15	6,014
194	452	646	220	9,284	9,504	26	16	42	58	7,965	18,740	444	27,149
0·4	1·0	1·4	2·5	21·3	21·8	0·1	...	0·1	0·1	18·1	42·8	1·1	62·0
0·7	1·6	2·3	0·8	34·2	35·0	0·1	0·1	0·2	0·2	29·3	69·0	1·7	100

TABLE

Total Crop Receipts and Receipts

Village	No. of farms	Total crop receipts	Gul	Turmeric	Groundnut	Coriander seeds	Chillies	Potatoes	Onions	Vegetables
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla	23	7,382	...	...	1,645	34	65	...	1	29
2 Bavdhan	31	7,154	173	1,644	1,621	36	21	231	28	97
3 Bhuinj	27	11,250	247	923	1,474	48	83	201	49	51
4 Bopardi	25	4,810	...	239	801	52	25	...	...	52
5 Chandak	25	5,374	65	...	542	11	8	1,371	14	4
6 Dehgaon	19	7,186	76	617	510	14	22	785	12	2
7 Gulumb	26	6,719	20	359	363	15	32	1,474	80	...
8 Kalangwadi	21	5,417	...	242	1,140	21	4	40	3	...
9 Kavtha	35	21,313	1,857	9,618	1,271	34	222	...	20	89
10 Kenjal	34	10,478	639	2,421	1,178	34	412	400	75	109
11 Kikli	36	13,726	164	3,454	1,562	26	126	1,446	...	...
12 Lohara	15	4,241	...	1,296	558	31	10	76	...	56
13 Menavli	23	3,961	...	...	656	49	17	84	...	17
14 Ojharda	31	11,700	50	444	2,434	22	22	856	1,109	9
15 Panda	17	6,632	154	1,849	635	10	47	...	...	...
16 Panchwad	23	6,790	95	446	1,363	79	58	...	26	42
17 Pasarni	39	8,100	...	...	823	52	60	24	...	...
18 Surul	27	8,130	...	1,252	782	14	38	1,203	46	15
19 Udtara	22	10,150	85	190	2,610	128	62	18	11	11
20 Virmada	22	5,584	...	98	1,409	45	75	...	44	7
21 Wai	36	10,500	...	15	2,952	113	66	48	...	...
Total	557	176,597	3,625	25,107	26,329	868	1,475	8,257	1,518	590
Average per farm	...	317·1	6·5	45·1	47·3	1·6	2·6	14·8	2·7	1·1
Percentage		100	2·1	14·2	14·9	0·5	0·9	4·7	0·9	0·3

No. 16

from Important Crops. (1937-38)

Jowar (Kharif)	Jowar (Rabi)	Bajri	Wheat, other than spelt	Spelt wheat	Rice	Udid	Tur	Mug	Gram	Safflower	Peas	Fodder, all kinds	Rabi Jowar fodder
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
337	1,736	517	140	82	4	170	100	10	251	119	...	2,051	1,171
84	892	425	190	94	...	124	6	16	176	91	34	985	691
13	3,119	959	228	148	6	287	23	26	556	87	...	2,659	2,080
...	1,144	98	105	13	124	174	...	...	63	94	260	1,513	1,311
4	1,014	549	155	11	425	21	4	11	110	37	25	929	651
...	1,807	674	300	169	41	210	2	20	225	82	...	1,514	1,255
8	1,413	931	237	...	18	155	7	18	165	76	9	1,253	868
...	1,370	446	62	11	...	90	21	33	97	119	...	1,620	1,265
112	2,851	1,233	58	948	...	131	56	8	260	53	...	2,334	1,606
11	1,717	780	406	86	...	90	8	14	185	41	6	1,732	1,256
...	2,592	887	134	97	...	122	14	29	127	201	...	2,591	2,076
29	622	178	44	125	5	59	9	1	30	48	42	952	656
293	722	400	32	...	47	133	21	...	34	51	74	1,296	782
2	2,523	967	252	94	...	167	4	22	390	153	...	2,020	1,704
70	1,594	397	258	4	...	74	11	4	152	26	...	1,311	961
25	1,885	375	165	60	7	123	58	5	148	87	3	1,682	1,313
951	1,129	1,151	192	...	118	189	28	...	173	59	263	2,816	1,343
11	1,774	739	84	337	1	56	1	30	95	87	...	1,462	1,075
55	3,170	225	116	101	...	129	77	282	417	96	...	2,291	1,705
11	1,663	162	184	79	4	96	35	83	102	35	...	1,411	1,147
577	2,102	450	207	3	...	202	141	33	271	81	54	2,921	1,651
2,593	36,839	12,543	3,549	2,462	800	2,802	626	645	4,021	1,723	770	37,143	26,567
4·6	66·1	22·5	6·4	4·4	1·4	5·0	1·1	1·2	7·2	3·1	1·4	66·7	47·7
1·5	20·9	7·1	2·0	1·4	0·5	1·6	0·4	0·4	2·3	1·0	0·5	21·0	15·1

TABLE

Total Crop Receipts and

Village	No. of farms	Total crop receipts	Gul	Turmeric	Ground-nut	Coriander seeds	Chillies	Potatoes	Onions	Vegetables	Jowar (Kharif)
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla	22	7,481	...	...	1,547	11	22	96	2	...	289
2 Bavdhan	18	5,484	380	992	842	17	27	128	32	15	54
3 Bhuinj	29	12,054	368	510	1,792	37	69	385	55	...	49
4 Bopardi	24	5,590	...	175	1,114	60	41	60	...	...	4
5 Chandak	18	3,809	45	...	519	10	6	776	14	...	8
6 Dehgaon	17	4,590	11	204	474	1	18	452	9	...	...
7 Gulumb	22	6,619	174	408	567	5	50	1,523	20	...	4
8 Kalangwadi	21	5,299	...	188	1,193	9	...	200	...	...	...
9 Kavtha	10	5,561	99	1,997	487	6	87	25	...	24	98
10 Kenjal	25	7,607	432	1,251	1,379	16	310	77	57	...	7
11 Kikli	10	3,594	60	450	711	14	14	306	2	...	...
12 Lohara	14	4,111	13	873	964	9	5	81	...	...	57
13 Menavli	20	3,805	...	...	665	30	40	96	...	...	300
14 Ojharda	18	7,618	...	453	1,112	5	3	418	583	4	...
15 Panda	15	4,342	138	772	512	4	14	17	16	...	35
16 Panchwad	23	7,322	...	179	2,120	57	36	16	18	...	41
17 Pasarni	36	7,289	...	...	1,221	33	26	...	...	...	895
18 Surul	28	7,749	232	870	965	2	25	1,044	23	...	5
19 Udtara	17	9,869	45	102	2,952	73	88	47	8	...	69
20 Virmada	13	3,489	...	73	1,217	9	10	...	...	...	7
21 Wai	38	12,389	...	102	4,136	68	99	299	10	188	624
Total	438	135,671	1,997	9,599	26,489	476	990	6,046	849	231	2,546
Average per farm	...	309·8	4·6	21·9	60·5	1·1	2·3	13 8	1·9	0·5	5·8
Percentage	...	100·0	1·5	7·1	19·5	0·4	0·7	4·5	0·6	0·2	1·9

No. 16-A

Receipts from Important Crops. (1936-37)

Jowar (Rabi)	Bajri	Wheat,other than spelt	Spelt Wheat	Rice	Udid	Tur	Mug	Gram	Safflower	Peas	Fodder, all kinds	Rabi Jowar fodder
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,023	579	139	71	...	146	59	7	347	68	...	1,992	1,160
1,249	180	197	26	...	37	7	3	197	18	54	795	589
3,626	1,063	203	83	6	324	38	13	832	63	1	2,463	1,844
1,643	160	92	6	74	180	2	1	58	48	477	1,257	1,114
643	491	283	...	60	17	8	25	110	2	22	687	427
1,492	405	142	13	...	81	17	3	152	20	...	1,030	872
1,676	478	150	4	...	53	34	10	107	8	14	1,198	890
1,577	379	5	17	...	31	33	30	69	77	...	1,363	1,052
1,167	263	27	243	...	37	38	2	92	15	...	794	514
1,571	474	196	38	...	50	22	19	173	19	...	1,368	1,031
817	243	65	28	...	51	4	8	57	37	...	699	538
891	105	47	51	24	54	2	...	10	7	162	791	622
820	283	20	...	38	93	80	...	39	22	77	1,180	643
2,250	531	143	24	...	127	10	22	405	37	2	1.405	1,184
1,357	226	81	2	...	40	22	3	134	6	...	939	719
2,157	397	136	34	...	132	43	8	350	52	3	1,464	1,049
944	865	48	...	129	147	36	1	210	12	254	2,383	924
1,801	615	75	253	...	53	6	24	252	43	...	1,398	988
2,977	222	123	102	...	166	68	275	645	43	...	1,807	1,255
1,008	94	95	9	9	42	27	38	96	10	...	739	588
2,556	612	74	...	...	174	88	25	308	25	114	2,712	1,508
34,245	8,665	2,341	1,004	340	2,035	644	517	4,643	632	1,180	28,464	19,511
78·2	19·8	5·3	2·3	0·8	4·6	1·5	1·2	10·6	1·4	2·7	65·0	44·5
25·2	6·4	1·7	0·7	0·3	1·5	0·5	0·4	3·4	0·5	0·9	21·0	14·4

The most important feature of this composition is that receipts from jowar (*kharif* and *rabi*), bajri and fodder make up 51 p. c. of the total. This emphasises the extent of subsistence farming. The dominance of one single crop—*rabi* jowar—is shown by the fact that the receipts from the grain and fodder of this crop constitute over a third, actually 36 p. c. of the total receipts from crops. Next to the food grain and fodder class, two crops stand out in importance. These are groundnut and turmeric which constitute 15 p. c. and 14 p. c. respectively of the total receipts from crops. Potatoes, the next important money-crop, contribute 5 p. c. to the total, while the receipts from sugarcane and its product raw sugar come up to a little over 2 p. c. of the total receipts. Similar percentages for both kinds of wheat together, are nearly 3 p. c. and for gram, 2 p. c. Pulses, which find a place for the first time in this table, are shown to be not very important, though they are grown universally. The one important pulse is udid, whose receipts form nearly 2 p. c. of the total. Nothing need be said here regarding the variations in the receipts from individual crops from village to village as this has already received some attention under the acreage and the crop combination tables. We may, however, specially notice a number of minor crops which find a place only in this table. These, together with the percentage which they contribute towards the total crop receipts during the year, are, as shown below:—coriander seed, 1 p. c.; chillies, 1 p. c.; onions, 1 p. c.; safflower, 1 p. c.. Of these chillies show special concentration in highly irrigated villages like Kavtha and Kenjal and a dispersion among the other comparatively well irrigated villages. Onions show a remarkable localization at one village—Ojharda; while coriander seed and safflower, which are not irrigated crops, are fairly evenly distributed over all the villages.

8. Total Farm Receipts

Table No. 17 shows the total receipts from farm business and their main sources. The total receipts of the average farmer, during the year, were valued at Rs. 411, of which Rs. 317 represented receipts from crops and Rs. 73 receipts from livestock. The classification of livestock receipts and of crop receipts according to individual items has been shown in previous tables; this table shows the division of crop receipts also according as the produce was sold, unsold or paid out in kind. Crop produce amounting to almost a sixth of the value of the total receipts from all crop produce was paid out in kind. The payments in kind are mainly of three types: (i) payments to landlords where the tenancy is crop-share tenancy, (ii) payments to *balutedars*, and (iii) payments to hired labour. Receipts from crop

TABLE No. 17

Total Farm Receipts (1937-38).

Village	No. of farms	Crop receipts				Livestock receipts			Income from other sources	Re-coveries from landlord	Grand total
		Cash sales	Payment in kind	Unsold	Total	Livestock products	Apprecia-tion	Total			
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	23	1,692	993	4,697	7,382	1,402	335	1,737	270	63	9,452
2 Bavdhan ...	31	2,254	1,145	3,755	7,154	1,320	376	1,696	329	285	9,464
3 Bhuinj ...	27	2,747	2,013	6,490	11,250	1,353	361	1,714	390	177	13,531
4 Bopardi ...	25	526	1,467	2,817	4,810	1,074	359	1,433	201	208	6,652
5 Chandak ...	25	1,514	760	3,100	5,374	1,443	545	1,988	151	75	7,588
6 Dehgaon ...	19	1,614	863	4,709	7,186	1,013	237	1,250	148	97	8,681
7 Gulumb ...	26	1,275	960	4,484	6,719	1,610	182	1,792	392	216	9,119
8 Kalangwadi ...	21	836	761	3,820	5,417	850	181	1,031	174	64	6,686
9 Kavtha ...	35	7,165	2,758	11,390	21,313	2,447	286	2,733	198	714	24,958
10 Kenjal ...	34	2,389	2,362	5,727	10,478	2,030	526	2,556	232	557	13,823
11 Kikli ...	36	4,115	1,849	7,762	13,726	1,809	380	2,189	414	190	16,519
12 Lohara ...	15	1,135	707	2,399	4,241	720	206	926	174	106	5,447
13 Menavli ...	23	614	724	2,623	3,961	735	249	984	314	65	5,324
14 Ojharda ...	31	3,099	2,098	6,503	11,700	1,706	231	1,937	351	261	14,249
15 Panda ...	17	1,483	1,054	4,095	6,632	717	67	784	195	188	7,799
16 Panchwad ...	23	1,543	771	4,476	6,790	1,749	286	2,035	269	50	9,144
17 Pasarni ...	39	1,014	1,387	5,699	8,100	1,522	617	2,139	867	137	11,243
18 Surul ...	27	2,488	868	4,774	8,130	1,224	272	1,496	504	41	10,171
9 Udtara ...	22	2,632	1,675	5,843	10,150	2,028	252	2,280	565	238	13,233
20 Virmada ...	22	1,046	927	3,611	5,584	1,132	206	1,338	207	65	7,194
1 Wai ...	36	2,150	2,243	6,107	10,500	5,431	1,190	6,621	1,467	322	18,910
Total ...	557	43,331	28,385	104,881	176,597	33,315	7,344	40,659	7,812	4,119	229,187
verage per farm	...	77·8	51.0	188·3	317·1	59·8	13·2	73·0	14·0	7·4	411·5
Percentage ...	...	19·0	12·4	45·7	77·1	14·6	3·2	17·8	3·4	1·7	100

TABLE No. 17-A

Total Farm Receipts (1936-37)

Village	No. of farms	Crop receipts				Livestock receipts			Income from other sources	Re-coveries from landlord	Grand total
		Cash sales	Payment in kind	Unsold	Total	Livestock products	Appreciation	Total			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	22	1,923	943	4,615	7,481	1,181	271	1,452	391	65	9,389
2 Bavdhan ...	18	1,550	932	3,002	5,484	1,018	153	1,171	342	104	7,101
3 Bhuinj ...	29	2,966	2,058	7,030	12,054	1,716	263	1,979	581	227	14,841
4 Bopardi ...	24	639	1,503	3,448	5,590	1,038	115	1,153	233	190	7,166
5 Chandak ...	18	809	711	2,289	3,809	737	269	1,006	108	70	4,993
6 Dehgaon ...	17	922	640	3,028	4,590	640	62	702	155	92	5,539
7 Gulumb ...	22	1,642	667	4,310	6,619	1,531	238	1,769	440	101	8,929
8 Kalangwadi ...	21	883	766	3,650	5,299	711	326	1,037	287	50	6,673
9 Kavatha ...	10	1,971	631	2,959	5,561	839	77	916	77	135	6,689
10 Kenjal ...	25	1,935	1,687	3,985	7,607	1,405	356	1.761	230	424	10,022
11 Kikli ...	10	921	498	2,175	3,594	455	106	561	75	46	4,276
12 Lohara ...	14	1,262	810	2,039	4,111	442	265	707	174	116	5,108
13 Menavli ...	20	516	655	2,634	3,805	1,007	34	1,041	334	53	5,233
14 Ojharda ...	18	2,296	1,012	4,310	7,618	951	172	1,123	246	201	9,188
15 Panda ...	15	1,205	597	2,540	4,342	291	95	386	228	59	5,015
16 Panchwad ...	23	1,779	1,033	4,510	7,322	1,962	276	2,238	429	78	10,067
17 Pasarni ...	36	888	1,382	5,019	7,289	1,487	335	1,822	893	86	10,090
18 Surul ...	28	2,043	830	4,876	7,749	1,441	92	1,533	759	70	10,111
19 Udtara ...	17	3,112	1,377	5,380	9,869	1,616	180	1,796	519	93	12,277
20 Virmada ...	13	727	487	2,275	3,489	667	132	799	131	26	4,445
21 Wai ...	38	3,002	2,919	6,468	12,389	6,014	439	6,453	1,689	353	20,884
Total ...	438	32,991	22,138	80,542	135,671	27,149	4,256	31,405	8,321	2,639	178,036
Average per farm	...	75·3	50·6	183·9	309·8	62·0	9·7	71·7	19·0	6·0	406·5
Percentage ...	...	18·5	12·5	45·2	76·2	15·3	2·4	17·7	4·6	1·5	100

sales amounted on an average to only Rs. 78 per farmer. This small amount shows again the comparatively self-sufficient character of the farmer's economy. While the lowest average crop sales per farmer occur in Kalangwadi, Bopardi, Menavli and Pasarni, the highest occur in Kavtha, Kikli and Udtara.

The receipts from livestock, for the average farmer, amounted to Rs. 73 during the year. Of these Rs. 13 represent the appreciation on livestock values; this does not represent actual income but only an accounting entry. The remaining amount of Rs. 60 is, as already shown, a highly composite one.

Income from other sources forms only a small proportion (3 p. c.) of the total receipts. The point of view adopted by us in recording income under this head was that demanded in a study of farm business. This point of view differed widely from the point of view that would be adopted, for example, by a student of family budgets. We noted such income only when its source had some close connection with the farm business. For instance, when a man and team were hired out from the business for a part of the time or when the operator put in casual hired labour outside, this was taken account of under this head. We, however, took no account of any source of income of the family which had nothing to do with the farm business. When any member of the operator's family earned by continuous labour away from the farm, we did not count his wages in the "other sources of income" of the farm business. The fact of his being away would be reflected not in the other income but in the number of days that he was recorded to have worked on the farm. The main components of this class of receipts are miscellaneous income from trees and the hire of team labour or the casual hire of family labour. The item, " recoveries from landlords", represents chiefly receipts in the shape of materials etc. supplied by landlords to tenants under the crop-share agreements.

9. Farm Expenses

Table No. 18 shows the various heads of farm expenses. The average expenditure per farm during the year has been calculated at Rs. 323. The main items of which this expenditure is made up are as shown in the table. The first item to be considered is the payment in respect of consolidated land revenue. This amounts on an average to Rs. 27 per farm and forms 8·3 p.c. of the total farm expenses. Caution has, however, to be exercised in interpreting this figure. The amount recorded under this head was only the actual amount paid by the farmer. The actual payment is, however, affected by two

TABLE

Farm

Village	No. of farms	Consolidated land revenue	Payment to landlord			Fodder and concentrates			Seeds and plants			Ma-
			Rent	Share of crop produce	Total	Produced on Farm	Cash purchases	Total	Produced on farm	Cash purchases	Total	Produced on farm
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	23	623	456	562	1,018	1,804	473	2,277	412	77	489	493
2 Bavdhan ...	31	889	651	637	1,288	1,320	1,097	2,417	792	679	1,478	734
3 Bhuinj ...	27	702	575	1,414	1,989	2,284	697	2,981	545	374	919	683
4 Bopardi ...	25	341	286	957	1,243	1,269	973	2,242	390	144	534	334
5 Chandak ...	25	461	171	222	393	800	876	1,676	476	899	1,375	469
6 Dehgaon ...	19	667	66	524	590	1,374	611	1,985	719	283	1,002	658
7 Gulumb ...	26	735	392	467	859	1,144	812	1,956	609	801	1,410	714
8 Kalangwadi	21	474	120	173	293	1,543	390	1,933	455	28	483	530
9 Kavtha ...	35	1,300	705	1,993	2,698	2,028	2,118	4,146	2,673	578	3,251	1,532
10 Kenjal ...	34	1,023	314	1,481	1,795	1,487	1,092	2,579	942	614	1,556	847
11 Kikli ...	36	822	464	973	1,437	2,382	777	3,159	1,462	310	1,772	1,228
12 Lohara ...	15	332	210	308	518	976	477	1,453	480	170	650	347
13 Menavli ...	23	332	337	275	612	1,176	840	2,016	328	110	438	295
14 Ojharda ...	31	1,366	170	1,273	1,443	2,022	776	2,798	864	524	1,388	1,136
15 Panda ...	17	728	261	585	846	1,164	451	1,615	648	149	797	368
16 Panchwad	23	518	382	304	686	1,601	632	2,233	387	134	521	453
17 Pasarni ...	39	915	706	543	1,249	2,533	1,609	4,142	594	82	676	626
18 Surul ...	27	836	229	424	653	1,322	745	2,067	665	521	1,186	635
19 Udtara ...	22	1,004	365	859	1,224	2,190	637	2,827	498	189	687	729
20 Virmada ...	22	554	227	380	607	1,278	495	1,773	396	79	475	698
21 Wai ...	36	465	1 774	1,259	3,033	2,416	2,079	4,495	714	284	998	743
Total ...	557	15,087	8,861	15,613	24,474	34,113	18,657	52,770	15,056	7,029	22,085	14,252
Average per farm ...	...	26 9	15·9	28·0	43·9	61·3	33·4	94·7	27·0	12·6	39 6	25·6
Percentage ...	...	8·3	4·9	8·7	13·6	18·9	10·4	29·3	8 4	3·9	12·3	7·9

No. 18

Expenses (1937-38)

nure		Hired labour			Payment (in kind) to Balutedars	Miscellaneous			Total actual expenditure		Attributed expenditure		Grand total
Cash purchases	Total	Paid in kind	Paid in cash	Total		Produce of farm	In cash	Total	Produce of farm	In cash	Deprecia-tion on livestock	Deprecia-tion on implements	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
61	554	304	447	751	229	45	224	269	3,849	2,361	158	186	6,554
523	1,257	352	540	892	252	10	498	508	4,104	4,877	329	296	9,606
270	953	472	538	1,010	356	105	338	443	5,859	3,494	159	259	9,771
118	452	203	379	582	346	52	520	572	3,551	2,761	88	229	6,629
192	661	223	312	535	425	114	342	456	2,729	3,253	59	328	6,369
231	889	193	557	750	258	80	348	428	3,806	2,763	92	183	6,844
320	1,034	251	311	562	411	57	361	418	3,653	3,732	158	363	7,906
76	606	166	102	268	308	18	186	204	3,193	1,376	205	160	4,934
1,614	3,146	533	1,642	2,175	546	101	1,015	1,116	9,406	8,972	433	512	19,323
546	1,393	523	631	1,154	608	133	451	584	6,021	4,671	140	449	11,281
448	1,676	574	544	1,118	514	55	384	439	7,188	3,749	210	377	11,524
124	471	115	181	296	308	28	243	271	2,562	1,737	26	190	4,515
68	363	199	500	699	294	60	395	455	2,627	2,582	75	188	5,472
140	1,276	555	861	1,416	366	56	502	558	6,272	4,339	429	136	11,176
178	546	121	400	521	316	25	347	372	3,227	2,514	140	206	6,087
54	507	385	212	597	182	100	260	360	3,412	2,192	185	242	6,031
155	777	155	861	1,016	683	146	764	910	5,280	5,088	230	370	10,968
212	847	103	361	464	331	70	414	484	3,550	3,318	119	343	7,330
140	869	522	545	1,067	406	71	307	378	5,275	3,187	262	236	8,960
149	847	329	199	528	329	77	273	350	3,487	1,976	178	178	5,819
287	1,030	562	748	1,310	515	78	587	665	6,287	6,224	40	465	13,016
5,902	20,154	6,840	10,871	17,711	7,983	1,481	8,759	10,240	95,338	75,166	3,715	5,896	180,119
10·6	36·2	12·3	19·5	31·8	14·3	2·6	15 7	18·3	171·1	134·6	6·7	10·6	323 1
3·3	11·2	3·8	6·0	9·8	4·4	0·8	4·9	5·7	52·9	41·7	2·1	3·3	100

TABLE

Farm Expenses

Village	No. of farms	Consolidated land revenue	Payment to landlord			Fodder and concentrates			Seeds and plants.			Ma-
			Rent	Share of crop produce	Total	Produced on farm	Cash purchases	Total	Produced on farm	Cash purchases	Total	Produced on farm
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	22	604	406	515	921	1,567	483	2,050	416	69	485	369
2 Bavdhan...	18	506	233	566	799	987	594	1,581	600	264	864	492
3 Bhuinj ...	29	795	609	1,336	1,945	2,110	858	2,968	838	277	1,115	730
4 Bopardi ...	24	336	156	899	1,055	1,165	846	2,011	388	172	560	321
5 Chandak...	18	280	79	270	349	608	458	1,066	205	432	737	271
6 Dehgaon ...	17	572	73	351	424	898	557	1,455	366	416	782	482
7 Gulumb ...	22	775	409	215	624	1,096	885	1,981	668	520	1,188	709
8 Kalangwadi	21	472	119	258	377	1,149	408	1,557	443	38	481	491
9 Kavtha ...	10	508	215	402	617	694	531	1,225	868	188	1,056	345
10 Kenjal ...	25	746	203	906	1,109	1,088	868	1,956	707	426	1,133	712
11 Kikli ...	10	220	72	264	336	642	189	831	342	161	503	284
12 Lohara ...	14	260	154	391	545	718	420	1,138	413	128	541	327
13 Menavli ...	20	299	419	221	640	1,093	863	1,956	271	72	343	294
14 Ojharda ...	18	1,057	54	512	566	1,272	582	1,854	563	580	1,143	646
15 Panda ...	15	520	268	247	515	804	342	1,146	457	81	538	268
16 Panchwad	23	500	322	406	728	1,438	721	2,159	438	52	490	468
17 Pasarni ...	36	872	618	589	1,207	2,044	1,699	3,743	551	51	602	502
18 Surul ...	28	850	221	417	638	1,281	740	2,021	783	302	1,085	675
19 Udtara :	17	942	303	538	841	1,762	419	2,181	468	62	530	511
20 Virmada ...	13	428	135	54	188	797	311	1,108	288	3	291	435
21 Wai ...	38	525	2,094	1,515	3,609	2,590	2,492	5,082	697	444	1,141	872
Total ...	438	12,067	7,162	10,872	18,034	25,803	15,266	41,069	10,770	4,738	15,508	10,204
Average per farm ...	...	27·6	16·4	24·8	41·2	58.9	34·9	93·8	24·6	10·8	35·4	23·2
Percentage ...	...	8·7	5·1	7·8	12 9	18 5	11 0	29·5	7·7	3·4	11·1	7·3

No. 18-A

(1936-37)

nure		Hired labour			Payment (in kind) to Balutedars	Miscellaneous			Total actual expenditure		Attributed expenditure		Grand total
Cash purchases	Total	Paid in kind	Paid in cash	Total		Produce of farm	In cash	Total	Produce of farm	In cash	Deprecia- tion on livestock	Deprecia- tion on implements	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
184	553	329	540	869	231	34	247	281	3,461	2,533	134	176	6,304
178	670	218	456	674	224	50	358	408	3,137	2,589	303	200	6,229
326	1,056	544	715	1,259	410	138	398	536	6,106	3,978	111	281	10,476
159	480	261	317	578	410	11	463	474	3,455	2,449	122	215	6,241
98	369	92	121	213	365	54	220	274	1,865	1,688	54	207	3,814
104	586	121	383	504	223	50	254	304	2,491	2,359	185	141	5,176
276	985	220	323	543	388	46	484	530	3,342	3,672	82	353	7,449
68	559	239	84	323	311	55	173	228	2,946	1,362	96	160	4,564
357	702	313	527	840	153	20	281	301	2,795	2,607	142	142	5,686
522	1,234	486	488	974	558	111	435	546	4,568	3,688	113	323	8,692
43	327	94	114	208	137	5	109	114	1,768	908	44	80	2,800
100	427	217	155	372	216	40	233	273	2,322	1,450	15	161	3,948
63	357	209	465	674	280	70	345	415	2,438	2,526	193	175	5,332
257	903	303	873	1,176	342	52	432	484	3,690	3,835	217	164	7,906
144	412	144	345	489	266	...	256	256	2,186	1,956	177	149	4,468
75	543	536	215	751	193	109	253	362	3,588	2,138	210	230	6,166
131	633	302	810	1,112	537	115	698	813	4,640	4,879	157	324	10,000
142	817	60	346	406	352	70	421	491	3,638	3,022	274	342	7,276
241	752	510	639	1,149	412	77	267	344	4,278	2,873	79	199	7,429
72	507	309	120	429	194	30	165	195	2,107	1,234	59	105	3,505
185	1,057	855	943	1,798	683	133	758	891	7,345	7,441	614	496	15,896
3,725	13,929	6,362	8,979	15,341	6,885	1.270	7,250	8,520	72,166	59,187	3,381	4,623	139,357
8·5	31·7	14.5	20·5	35·0	15·7	2·8	16·7	19·5	164·7	135·2	7·7	10·6	318·2
2·7	10·0	4·6	6·5	11·1	4·9	0·9	5·2	6·1	51·7	42·6	2·4	3 3	100

factors. Firstly, there are some farmers who hold portions of their lands under the *inam* tenure, in which case they are exempt from payment of part of the land revenue. A much more important consideration is the fact that no land revenue would be paid in respect of lands held by the farmer as a tenant. For tenanted lands, only rent, either in kind or in cash, would be paid and no land revenue. Most other items of farm business expenditure are, however, incurred for operations in respect of the entire farm, including its tenanted part. The proportion of the consolidated land revenue payment to total expenditure would, therefore, be higher where the farm was wholly owned and paid full assessment, than is shown in the above table.

The total payments, whether in cash or in kind, made to landlords worked out at Rs. 44 per farm during the year. These payments were, of course, made only for lands which were rented. They, therefore, represent not the rental of the entire average farm but only of that portion of the farm which was held by the farmer as a tenant. The rent paid in cash per farm was on an average Rs. 16 and that paid in kind by way of a crop-share was valued at Rs. 28. In considering the payment of rent in kind, allowance should, however, be made for the recoveries from landlords which have been shown on the receipts side. As the proportion of the area of land rented on the cash or the crop-share basis differs from village to village, no conclusions can be drawn from the figures in this table regarding the comparative incidence of cash and share rents.

The most considerable single item of annual expenditure is the expenditure incurred on feeding the livestock, the average expenditure on this item per farm during the year being Rs. 94.7. This comprised every head of expenditure on this account such as hire of pasture land, purchase of concentrates as well as jowar and other fodder which form the bulk of the feed supplied, Rs. 61.3 of these Rs. 94.7 represented fodder supply of all kinds produced by the farm business itself. The bulk of this home supply consisted of jowar and other crop fodder. It will be noticed that the total production of all kinds of crop fodder by the average farm business was valued at Rs. 67. Only a small portion of this was sold; a certain portion was given to the landlord as share of the crop, to *balutedars* and also, in some cases, to hired labour. The bulk was consumed on the farm. There would, of course, be no necessary balancing of fodder production and consumption in the individual unit or even the individual village. But for our sample as a whole the bulk of the fodder grown was consumed in the farm business itself. The average farmer had to incur an expenditure of Rs. 33·4 in cash for the additional requirements of fodder supplies. Not only is this item of expenditure the largest single item as a whole but the cash expenditure on fodder of the average farmer was also larger than any other single item of cash expenditure.

The two next important items of expenditure are seeds and manure. The average expenditure per farm on these items was, during the year, Rs. 39·6 and Rs. 36·2 respectively. The proportion of home production to total expenditure was similar in both cases.

The next important item of expenditure is hired labour. This includes chiefly two types of labour: (i) casual hired labour, (ii) permanent farm servants. The number of permanent farm servants is not large. No permanent farm servants have been noted in our sample in some of the villages. The maintenance of a farm servant as well as the employment of hired labour depend on a variety of factors such as the size of the farm, the intensity of cultivation and the supply of family labour, which is low in case of well-to-do farmers and especially in the few families who observe *purdah*. The average expenditure on this item per farm, of about Rs. 32, was made up in the following manner: (i) casual hired labour Rs. 25, (ii) farm servants Rs. 6. (iii) other labour expenses Re. 1.

The only important item of expenditure remaining to be noted is the payment made to *balutedars*. This amounted on an average to Rs. 14·3 per farm during the year and formed 4·4 p.c. of the average farm expenses. A number of elements are mixed in this payment. In the main it is a payment for the maintenance and repair of farm equipment, chiefly of tools and implements. It is, however, also partly a payment for certain domestic services and supplies and partly a contribution towards the cost of village administration. It contains in addition a charitable element also. The payment is proportionate to produce and is paid according to scales, per crop, fixed traditionally in each village. It should be noted, however, that variations in these payments may take place, depending on the pertinacity of the *balutedar* and the good-will of the farmer. It is also less possible to evade payment in case of crops like jowar, bajri, groundnut and turmeric which are harvested or prepared at fixed periods in large volume, than in the case of miscellaneous garden crops whose produce is gathered in small quantities at more frequent intervals.

We have finally to comment on the group of miscellaneous expenditure, The average expenditure per farm for the whole group amounted during the year to Rs. 18·3. The main heads in this group and the average expenditure incurred on each of them is indicated below: (i) repairs of all kinds, Rs. 7; (ii) materials, Rs. 6; (iii) maintenance of dog, Rs. 3; (iv) hire of implements, Re. 1; and (v) kerosene for lamp, Re. 1. The head 'repairs' includes repairs to farm buildings, wells and embankments, fences and tools and implements. These represent cost of additional repairs, not covered by payments to *balutedars.* This head does not include expenditure on new items, renovations or additions, but only includes what could be regarded as normal repairs. The expenditure on 'materials' represents cost of miscellaneous supplies, chiefly ropes, baskets, bags, etc., that have to be purchased by each farmer every year for the farm business. The expenditure on feeding a dog is, of course, not incurred by everybody. It is incurred only by those who keep a watch-dog which helps them in the farm business. After careful enquiry we came to the conclusion that where a watch-dog is maintained the cost of his feed should be properly charged to the farm business. On a conservative estimate the cost of maintaining a watch-dog in this tract has been put at Rs. 10 p. a. The expenditure on hire of implements consists chiefly of sums paid for hire of iron ploughs. A number of farmers in the tract do not possess iron ploughs. When they require the services of an iron plough, they, therefore, hire it from some neighbour. The usual charge for the hire of an iron plough is four annas per day. The expenditure on kerosene is incurred for lighting the lamp required at night during the period that the crops require watching and for irrigating the crops at nights when water is available only at that time. It contains no element of expenditure for domestic purposes.

The last two items of expenditure are not items of actual expenditure but represent calculated deductions. The first of these is net depreciation on livestock which was Rs. 6·7 per farmer i. e. 2·1 p. c. of the total expenses. Net appreciation and depreciation on livestock have been defined in Chapter IV. Whenever the result of the total livestock values calculated according to the definition was to reveal a net appreciation, this was considered as a receipt and credit given for it accordingly ; where the calculations revealed a net depreciation, it was debited as an item of expenditure. Column No. 25 in the above [table shows the total of the amounts debited as depreciation in cases where a net depreciation was revealed. It should be noted that appreciation and depreciation not only take account of variations in values due to growth of young stock and the ageing of mature cattle but also allow for loss in value due to deaths. It would, perhaps, have been desirable to debit to current expenditure only a general calculated charge on account of the risk of death of cattle and to take loss due to accidental deaths to capital account. But as no cattle insurance is practised in the tract and as no reliable figures of cattle mortality are available, the only course open to us was the one we have followed. The second class of expenditure in this group is the calculated depreciation of buildings, tools, implements etc. The method of its calculation has already been indicated Chap. I. The average charge per farmer on this account was calculated at Rs. 10·6 for the year.

Not much purpose can be served by discussing the variations in heads of expenditure as between the different villages. Almost all these heads have a composite character and variations in them depend upon a large number of independent factors. The varying proportions of owned and tenanted lands make it impossible to discuss the variations in respect of land revenue and rent. The factors determining the extent of expenditure on hired labour and *baluta* have already been indicated above. Expenditure on fodder would depend on the number and character of livestock units and expenditure on seeds and manure would depend chiefly on the character of cultivation.

The table enables us also to look at the total expenditure of the average farmer from two other points of view. In the first instance it separates expenditure incurred in cash from expenditure incurred in kind. The total actual expenditure incurred has been calculated for the year at Rs. 305·7 per farm business. Of this Rs. 171·1 have been incurred in kind i.e. by paying out or using the produce of the farm; and expenditure amounting in all to Rs. 134·6 has been incurred in cash. The itemised classification of cash and kind expenditure has been indicated above. The figure of Rs. 134·6 is, however, important as indicating the total amount of cash required during the whole year by the farmer for running his business and as throwing some light on the financial requirements of the average farm business. The data illuminate the economy of the average farmer from still another point of view. We have seen in former sections that the total sales of crops made by the average farmer amounted in the year to Rs. 77·8 and the sales of livestock products to Rs. 15·6. The income from recoveries from landlords which amounted to Rs. 7·4 must also in this connection be taken into account. For, though most of these receipts may have been in the form of materials, we have for purposes of expenditure treated them as purchases from outside, because they were not produce of the farm itself. An element of cash receipts, which we have not tabulated separately, would also be found in income from other sources. The total receipts which would, therefore, be available to the average farmer, as against the average cash expenditure of Rs. 134·6, would be a little over Rs. 100. This indicates clearly that, apart from the cash that the average farmer may require for domestic purposes, the cash needs of his business could not be covered by its cash receipts. In actual fact they were, of course, covered. But the source from which this was done, was not the farm business. It may have been income other than that connected with the farm business, or borrowings. We cannot enter into these questions; the phenomenon is, however, significant.

This table further enables us to ascertain the element, of what may be called, double-entry in our statement of accounts. We have pointed out elsewhere that in the English and American surveys fodder, seeds, manure, etc. which are both produced and consumed by the farm business are counted neither as receipts nor as expenses. We have, for certain reasons, counted them on both the sides. This table shows that the value of fodder (Rs. 61·3), seeds (Rs. 27) and manure (Rs. 25·6) which being produce of the farm were consumed in the farm business, amounted on an average to Rs. 113·9 per farm. We may deduct this amount from both the receipts and expenditure sides to get figures comparable with English and American figures. The result would be to show the total receipts at Rs. 297.6 and total expenditure at Rs. 209·1 for the year per farm. The net result is, of course, not affected.

10. Profit and Loss

Table No. 19 shows the results of the farm business per village. The column of adjusted acres shows the holdings of land by farmers in the sample in each village reduced to one comparable base. The two main elements that have influenced the process of adjustment are the quality of the soil and irrigation facilities. It is interesting to compare the average size per village as given in terms of natural (i. e. unadjusted) acres with that in terms of adjusted acres. Table No. 10, which gives the natural acres, shows Virmada and Panchwad as having the smallest average farms. The above table shows Virmada and Panchwad as still low in the list; the lowest two are, however, Menavli and Bopardi.

The next columns show the number of labour units utilised, divided into hired units and family units. The number of family

TABLE No. 19

Summary 1937-1938

Village	No. of farms	Area operated (adjusted acres)	Labour units			Total farm receipts	Total farm ex-penses	Farm income	Interest on invest-ment at 3%	Family labour income	Cost of family labour	Invest-ment income	Net profits
			Hired	Family	Total								
						Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1 Asla ...	23	296·0	6·95	15·30	22·25	9,452	6,554	2,898	1,776	1,122	1,652	1,246	(-) 530
2 Bavdhan ...	31	385·5	8·34	21·70	30·04	9,464	9.606	(-) 142	2,105	(-) 2,247	2,358	(-) 2,500	(-) 4,605
3 Bhuinj ...	27	468·5	9·41	26·33	35·74	13,531	9,771	3,760	2,342	1,418	2,844	916	(-) 1,426
4 Bopardi ...	25	198·8	5·41	21·76	27·17	6,652	6,629	23	897	(-) 874	2,349	(-) 2,326	(-) 3,223
5 Chandak ...	25	247·0	4·94	33·17	38·11	7,588	6,369	1,219	2,056	(-) 837	3,582	(-) 2,363	(-) 4,419
6 Dehgaon ...	19	290·6	6·94	16·43	23·37	8,681	6,844	1,837	2,367	(-) 530	1,773	64	(-) 2,303
7 Gulumb ...	26	340·4	5·17	34·78	39·95	9,119	7,906	1,213	2,297	(-) 1,084	3,758	(-) 2,545	(-(4,842
8 Kalangwadi	21	215·5	2·47	16·26	18·73	6,686	4,934	1,752	1,461	291	1,755	(-) 3	(-) 1,464
9 Kavtha ...	35	616·3	20·11	36·65	56·76	24,958	19,323	5,635	4,106	1,529	3,960	1,675	(-) 2,431
10 Kenjal ...	34	474·9	10·65	48·95	59·60	13,823	11,281	2,542	3,234	(-) 692	5,283	(-) 2,741	(-) 5,975
11 Kikli ...	36	369·3	19·88	28·91	48·79	16,519	11,524	4,995	2,752	2,243	3,123	1,872	(-) 880
12 Lohara ...	15	175·6	2·76	21·38	24·14	5,447	4,515	932	1,033	(-) 101	2,295	(-) 1,363	(-) 2,396
13 Menavli ...	23	166·4	6·45	19·42	25·87	5,324	5,472	(-) 148	980	(-) 1,128	2,097	(-) 2,245	(-) 3,225
14 Ojharda ...	31	480·2	11·72	20·41	32·13	14,249	11,176	3,073	3,223	(-) 150	2,166	907	(-) 2,316
15 Panda ...	17	277·2	4·73	16·26	20·99	7,799	6,087	1,712	1,875	(-) 163	1,755	(-) 43	(-) 1,918
16 Panchwad ...	23	212·5	5·52	23·00	28·52	9,144	6,031	3,113	1,546	1,567	2,484	629	(-) 917
17 Pasarni ...	39	377·3	9·79	33·95	43·74	11,243	10,968	275	2,446	(-) 2,171	3,663	(-) 3,388	(-) 5,834
18 Surul ...	27	343·9	4·26	29·80	34·06	10,171	7,330	2,841	2,429	412	3,222	(-) 381	(-) 2,810
19 Udtara ...	22	418·1	9·89	20·34	30·23	13,233	8,960	4,273	3,199	1,074	2,196	2,077	(-) 1,122
20 Virmada ...	22	210·8	4·89	15·42	20·31	7,194	5,819	1,375	1,573	(-) 198	1,665	(-) 290	(-) 1,863
21 Wai ...	36	557·2	11·77	45·23	57·00	18,910	13,016	5,894	1,995	3,899	4,887	1,007	(-) 988
Total ...	557	7,122·0	172·05	545·45	717·50	229,187	180,119	49,072	45,692	+ 3,380	58,867	(-) 9,795	(-) 55,487
Average per farm	...	12·8	0·30	1·00	1·30	411	323	88	82	+ 6	105	(-) 17	(-) 99

TABLE No. 19-A

Summary (1936-37)

Village	No. of farms	Area operated (adjusted acres)	Labour units			Total farm receipts	Total farm ex-penses	Farm income	Interest on invest-ment at 3 percent	Family labour income	Cost of family labour	Invest-ment income	Net profits
			Hired	Family	Total								
						Rs.	Rs.	Rs.	Rs.	Rs.	Rs,	Rs.	Rs.
1 Asla ...	22	283·5	8·02	14·94	22·96	9.389	6,304	3,085	1,724	1,361	1,623	1,462	(-) 262
2 Bavdhan ...	18	225·3	5·81	11·84	17·65	7,101	6,229	872	1,311	(-) 439	1,278	(-) 406	(-) 1,717
3 Bhuinj ...	29	498·6	11·65	28·98	40·63	14,841	10,476	4,365	2,626	1,739	3,123	1,242	(-) 1,384
4 Bopardi ...	24	176·2	5·32	20·51	25·83	7,166	6,241	925	882	43	2,214	(-) 1,289	(-) 2,171
5 Chandak ...	18	142·5	1·95	20·83	22·78	4,993	3,814	1,179	1,145	34	2,250	(-) 1 071	(-) 2,216
6 Dehgaon ...	17	240·1	4·62	13·92	18·54	5,539	5,176	363	1,875	(-) 1,512	1,503	(-) 1,140	(-) 3,015
7 Gulumb ...	22	313·9	5·04	33·84	38·88	8,929	7,449	1,480	2,369	(-) 889	3,654	(-) 2,174	(-) 4,543
8 Kalangwadi	21	207·3	2·85	16·34	19·19	6,673	4,564	2,109	1,451	658	1,764	345	(-) 1,106
9 Kavtha ...	10	237·8	7·69	9·65	17·34	6,689	5,686	1.003	1,675	(-) 672	1,044	(-) 41	(-) 1,716
10 Kenjal ...	25	346·3	8 98	39·61	48·59	10,022	8,692	1,330	2,366	(-) 1.036	4,275	(-) 2,945	(-) 5,311
11 Kikli ...	10	103·7	1 93	7·58	9·51	4,276	2,800	1,476	689	787	819	657	(-) 32
12 Lohara ...	14	151·8	3·46	17·25	20·71	5,108	3,948	1,160	824	336	1,863	(-) 703	(-) 1,527
13 Menavli ...	20	149·3	6·21	17·62	23·83	5,233	5,332	(-) 99	885	(-) 984	1,899	(-) 1,998	(-) 2,883
14 Ojharda ...	18	318·0	10·99	10·78	21·77	9,188	7,906	1,282	2,489	(-) 1,207	1.161	121	(-) 2,368
15 Panda ...	15	190·0	4·46	12·26	16·72	5.015	4,468	547	1,359	(-) 812	1,323	(-) 776	(-) 2,135
16 Panchwad ...	23	197·6	6·95	22·67	29·62	10.067	6,166	3.901	1,451	2,450	2.448	1,453	2
17 Pasarni ...	36	357·0	10·39	32·36	42·75	10,090	10.000	90	2,321	(-) 2.231	3.501	(-) 3,411	(-) 5,732
18 Surul ...	28	353·7	3·73	30·15	33·88	10.111	7,276	2.835	2,479	356	3.258	(-) 423	(-) 2,902
19 Udtara ...	17	375·8	10·65	16·00	26·65	12,277	7,429	4,848	2,986	1,862	1,746	3,102	116
20 Virmada ...	13	130·6	4·07	9·33	13·40	4,445	3,505	940	1,071	(-) 131	1,008	(-) 68	(-) 1,139
21 Wai ...	38	605·4	16·63	45·56	62·19	20,884	15,896	4,988	2,240	2,748	4,923	65	(-) 2,175
Total ...	438	5,604·4	141·40	432·02	573·42	178,036	139,357	38,679	36.218	2.461	46,677	(-) 7,998	(-) 44,216
Average per farm	...	12·8	0·32	0·99	1·31	406·5	318·2	88·3	82·7	5·6	106·6	(-) 18·3	(-) 101·0

units per farm is on an average 1·0 and that of hired units 0·3. Units of hired labour depend on the character and intensity of cultivation and on the family labour available. The figures make clear the very limited extent of employment available in the average farm business in this tract.

The last columns in the above table show the results of the farm business for the year. The interest charge has been calculated at the conservative figure of 3 p.c.[1] on total investment and the cost of labour per adult male unit of family labour at Rs. 108 per year or Rs. 9 p. m. Even with these modest allowances, the farms in the sample in every village show, as a whole, a net loss. The average net loss for the whole sample was Rs. 99 per farm. As the farms in each village do not constitute a homogeneous group, we make no attempt here to discuss the variations, by villages, in farm incomes and net profits. The only way of trying to find out the reasons for variations and the factors which affect the capacity to make profits is to tabulate the results according to each characteristic of the farm business which may be presumed to affect profitability. This is attempted in the next chapter.

II. Value of Produce Sold and Consumed

Table No. 20 sets out the figures of value of the produce of different crops classified according to whether the produce was sold, paid out in kind, or retained at home. The table brings out in a striking manner the difference between the money crops and the grain and other subsistence crops. At the one extreme are crops like safflower, wheat and udid of which an extremely small proportion of the produce was sold. Bajri and *kharif* jowar show an almost equally large proportion of the produce retained at home. Among the cereals *rabi* jowar which is the main crop of the tract shows the highest, proportion of produce sold, but even in this case the value of the produce sold was less than one-eighth of the produce retained at home. It should be further noted that *rabi* jowar was sold in considerable quantities only in villages like Udtara which had rich lands with jowar as the main crop. In the other villages the share retained at home of this crop was even greater than is indicated by the average. In villages where irrigation facilities were good and money crops were

---

[1] The rate of 3 p. c. as return on capital investment assumed by us is, of course, arbitrary. It is, however, interesting to note that the relation that is found to subsist in this tract between the value of annual rents received by landlords and the value of rented lands approximates closely to this figure. The value of rented lands, included in the surveyed farms, was for the year 1937-38 Rs. 746,600 and the total value of rent received by the landlords, both in cash and in kind, during the same year was Rs. 24,474.

TABLE No. 20

Manner of Disposal of Produce of Important Crops (1937-38.)

S. No.	Crop	Sold		Unsold						Total sold and unsold	
				Retained at Home		Paid in Kind		Total Unsold			
1	2	3	4	5	6	7	8	9	10	11	12
		Rs.	p.c.	Rs.	p.c.	Rs.	p.c.	Rs.	p.c.	Rs.	p.c.
1	Turmeric (boiled and dried) ...	13,868	82·3	965	5·8	1,999	11·9	2,964	17·7	16,832	100
2	Turmeric Sets (for planting) ...	...	...	7,734	93·3	551	6·7	8,285	100	8,285	100
3	Groundnut (all varieties) ...	12,339	46·9	6,904	26·2	7,123	26·9	14,027	53·1	26,366	100
4	Potato (*kharif*)...	5,419	91·0	220	3·7	314	5·3	534	9·0	5,953	100
5	Potato (*rabi*) ...	1,040	44·3	1,082	46·3	223	9·4	1,305	55·7	2,345	100
6	Jowar (*kharif*) ...	198	7·6	1,936	74·8	451	17·6	2,387	92·4	2,585	100
7	Jowar (*rabi*) ...	3,115	8·4	26,671	72·3	7,106	19·3	33,777	91.6	36,892	100
8	Bajri ...	859	6·6	9,544	75·8	2,195	17·6	11,739	93·4	12,598	100
9	Wheat (all varieties) ...	211	3·5	4,906	81·8	882	14·7	5,788	96·5	5,999	100
10	Gram ...	456	11·2	3,204	78·9	401	9·9	3,605	88·8	4,061	100
11	Udid ...	132	4·7	2,244	79·6	447	15·7	2,691	95·3	2,823	100
12	Safflower ...	23	1·5	1,523	87·3	195	11·2	1,718	98·5	1,741	100
13	Chillies ...	460	30·6	910	60·5	134	8·9	1,044	69·4	1,504	100
14	Gul ...	1,780	56·7	847	27·0	510	16·3	1,357	43·3	3,137	100
	Total ...	39,900	30·6	68,690	52·2	22,531	17·2	91,221	69·4	1,31,121	100

TABLE No. 21

Percentage of the value of the Produce of Important Crops to the total value of the Crop Produce Sold, Retained at home and Paid in kind

S. No.	Crop.	Sold	Unsold			Total (sold and unsold)
			Retained at Home	Paid in Kind	Total Unsold	
1	2	3	4	5	6	7
1	Turmeric (boiled & dried) ...	34.70	1·41	8·88	3·25	12·85
2	Turmeric Sets (for planting)	...	11·30	2·45	9·08	6·30
3	Groundnut (all varieties)...	31.00	10·07	31·65	15·36	20·07
4	Potato (*kharif*) ...	13.60	0·32	1·40	0·59	4·54
5	Potato (*rabi*) ...	2.60	1·58	0·99	1·43	1·79
6	Jowar (*kharif*) ...	0·50	2·82	2·01	2·62	1·97
7	Jowar (*rabi*) ...	7·80	38·90	31·60	37·00	28·10
8	Bajri ...	2·20	13·90	9·74	12·90	9·58
9	Wheat (all varieties) ...	0·38	7·25	3·92	6·35	4·57
10	Gram ...	1·20	4·67	1·79	3·96	3·10
11	Udid ...	0·30	3·26	1·99	2·95	2·15
12	Safflower ...	0·06	2·22	0·87	1·88	1·33
13	Chillies ...	1.20	1·33	0·60	1·15	1·15
14	Gul ...	4·50	1·24	2·27	1·49	2·39
	Total ...	100	100	100	100	100

grown the amount of jowar grown was not very large and almost all the produce of the crop, both grain and fodder, was retained at home. The predominant money crops were chillies, sugarcane, potatoes, groundnut and turmeric. A certain quantity of chillies is grown by almost every farmer for home consumption. The amount of the value of chillies sold is mostly made up of the value of the crop sold from the three villages--Kavtha, Kenjal and Kikli where it is grown on an extensive scale under irrigation. In most of the other villages the larger part of the produce is retained at home. Only a very small portion of the sugarcane crop is sold or consumed in the cane form. The cane juice is ordinarily turned into raw sugar (gul) and then sold or consumed. Sugarcane is a costly crop to grow, requiring considerable irrigation all the year round. It is, therefore, grown in only a few villages. The table shows a fairly considerable amount of raw sugar as having been retained at home unsold. This, however, was mostly not retained for consumption. Of the value of Rs. 847 of gul retained at home at the end of the year, Rs. 643 are accounted for by one village viz. Kavtha. Most of this may be taken as being held for sale. The value of groundnut retained for home consumption is roughly about half of that of the quantity sold. Groundnut forms an important item of supplementary diet in the tract, in which the chief edible oil used is groundnut oil. It is also, for the large majority of the dry cultivators, the most important money crop. We have already observed that dry farmers who grow little groundnut have little to sell. The potato and the turmeric crops are almost entirely sold, a very small proportion being retained for home consumption. It should be noted that *rabi* potatoes are largely used as seedlings. Hence that crop naturally shows a large proportion as being retained at home. The *kharif* potatoes cannot be used as seedlings and they represent the comparative proportion of sold and retained at home more correctly, without any disturbance from this extraneous factor. Similar allowance has to be made in considering turmeric sales. We have in this case to distinguish between turmeric prepared for consumption and the rhizomes. The rhizomes are to a large extent retained at home because they are used as planting sets. It will be noted that sales of turmeric have a higher value than those of any other crops; groundnut follows close behind. But turmeric cannot be and is not grown in all parts of the tract.

No special comment is needed on the column in this table which represents the value of the crop paid out in kind. This is a composite item consisting chiefly of the share of the landlord under share tenancy, payments to *balutedars* and payments in kind to hired labour. All these, especially the two latter, vary from crop to crop. The extent of share tenancy also is similarly liable to vary. Hence it is not possible to analyse these figures to any purpose. Attention may, however, be drawn to the specially high figure under groundnut. This is due to the fact that the work of digging out the groundnut crop is almost universally paid for in kind.

Table No. 21 sets out the percentage share of the value of each crop in the value of the total produce sold, retained, etc. for the whole tract. It brings out clearly the relative importance of the various crops as money crops or subsistence crops. No separate comments are needed on this table.

CHAPTER VI

INCOMES AND PROFITS

We have presented data regarding the size and character of the average farm business in the last chapter. In this chapter we analyse the data we have collected from a different point of view. We shall attempt to see whether by examining the data in a variety of different ways it is possible to throw some light on the factors that determine, in this tract, the size of the farmer's income and his profits.

Throughout this analysis we use two measures for determining the size of incomes and profits. The first measure is the "farm income" and the second measure is the "net profits." Farm income is the total that remains to the farmer after deducting the farm expenses from the farm receipts. Farm expenses according to our definition do not include either interest on the farm investment or the cost of the labour of the operator and his family. Farm income thus represents the total income received by the farmer from his business in respect of his capital investment, the labour put in by him and his family, and the profits of the farm business. It is a composite measure. But it is in many ways the most significant measure, because it gives the nearest approximation to what is normally considered by the farmers and the rest of the community as the income of farmers and what mostly determines their standard of living. The measure of "net profits" is, on the other hand, theoretically superior to the measure of the "farm income." In measuring farm income there is a difference made in the treatment given to the owner and the tenant. In respect of tenanted land the rent that is actually paid is included in the farm expenses; no expense, other than the payment of land revenue is, however, allowed in respect of owned land. In the same manner a difference in the proportions of family labour and hired labour used in the farm business may affect comparability. The "net profits" measure by duly allowing for interest on investment and the cost of family labour reduces all businesses to a properly comparable level.

We have compiled all the tables in this chapter with reference to the two measures, "farm income" and "net profits." The manner of compilation of the tables is uniform. "Farm income" and "net profits", as also all factors whose influence on income or profits we desire to study, have been divided into a series of classes. The data are presented in the form of frequency tables showing the frequency grouping by classes both of the factor studied and the measure of income or profits. The tables thus bring out whether any particular class or classes of the factor studied are specially associated with any particular size or sizes of incomes and profits. The varied character and the volume of the data collected would make possible a very large number of such tables. We have, however, had to content ourselves in this report with presenting what we consider to,be the most important and significant of these. The commentary on each table has also been made brief and is confined to pointing out only the most salient features of the tables studied.

We have in this chapter, as in the previous chapter, presented the data in separate tables relating to the two years 1936-37 and 1937-38 respectively, but analysed in detail and commented upon the data only for the year 1937-38. The reasons for this procedure are the same as those explained at the beginning of Chapter V. The nature of the sample and the working of the results for the two years are so similar that a separate commentary on the data for the year 1936-37 proves to be a needless repetition. A comparative study of the frequency tables for the two years presented in this chapter will show that the remarks made in respect of the results for 1937-38 apply with almost equal force to the results for 1936-37. Because of the variations in the price levels for the two years, however, a difference is made in the incomes and profits as related to the various combinations of crops. For example, the jowar-bajra· group makes in relation to net profits, better showing in 1936-37 than in 1937-38. Classes 3 and 4 in the crop combinations also do better in 1936-37 in respect of both incomes and profits than in 1937-38. On the contrary, as is to be expected because of the price movements, turmeric and the dominantly garden crop farmers fare worse in 1936-37 than in 1937-38. It was the difference in prices that was, perhaps, also responsible for the fact that while the average results in 1936-37 are almost the same as in 1937-38 the number of farmers who make a profit is proportionately somewhat more and the number of farmers with negative farm incomes is proportionately somewhat less in the former than in the latter year. Apart from the results in relation to crop combinations, the only marked variation in results between the two years revealed by the frequency tables is that there is less difference between the pure cash and the pure share tenants' position in 1936-37 than in 1937-38.

1. Size of Farm

The size of the undertaking is one of the most obvious factors influencing the size of income and profits. We, therefore, study in

TABLE No. 22.

Size of Farm in Adjusted Acres—Farm Income (1937-38).

Size of Farm Acres→ / Farm Income Rs. ↓	0 to below 5	5 to below 7·5	7·5 to below 10	10 to below 12·5	12·5 to below 15	15 to below 17·5	17·5 to below 20	20 to below 22·5	22·5 to below 25	25 to below 27·5	27·5 to below 30	30 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below-50	4	5	5	4	7	1	1	1	2	1	1	1	33
-50 to below 0	20	12	10	16	10	5	1	...	1	1	...	...	76
0 „ „ 50	24	34	21	19	17	9	5	...	1	...	1	3	134
50 „ „ 100	14	19	23	22	20	10	3	6	2	1	...	2	122
100 „ „ 150	4	6	16	14	15	7	6	6	1	2	...	4	81
150 „ „ 200	2	1	5	4	4	6	3	3	...	2	1	1	32
200 „ „ 250	...	1	4	5	8	2	3	1	1	...	2	1	28
250 and above	...	2	1	5	4	5	9	3	2	2	4	14	51
Total ...	68	80	85	89	85	45	31	20	10	9	9	26	557

TABLE No. 23.

Size of Farm in Adjusted Acres—Net Profits (1937-38).

Size of Farm Acres→ / Net Profits Rs. ↓	0 to below 5	5 to below 7·5	7·5 to below 10	10 to below 12·5	12·5 to below 15	15 to below 17·5	17·5 to below 20	20 to below 22·5	22·5 to below 25	25 to below 27·5	27·5 to below 30	30 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	...	2	1	...	2	1	4	...	...	1	1	5	17
50 to below 100	2	1	2	4	3	3	1	...	...	...	1	2	19
0 „ „ 50	2	4	7	6	5	2	6	2	1	2	2	1	40
-50 „ „ 0	18	11	12	14	11	7	6	5	1	...	1	2	88
-100 „ „ -50	30	27	25	15	10	10	4	4	...	...	...	1	126
-150 „ „ -100	11	23	24	16	18	6	3	3	2	1	1	1	109
-200 „ „ -150	5	8	9	21	22	6	2	3	...	2	...	3	81
-300 „ „ -200	...	4	5	11	12	7	4	3	3	1	3	5	58
below -300	...	...	...	2	2	3	1	...	3	2	...	6	19
Total ...	68	80	85	89	85	45	31	20	10	9	9	26	557

TABLE No. 22-A.

Size of Farm in Adjusted Acres—Farm Income (1936-37).

Size of Farm Acres→ Farm Income Rs. ↓	0 to below 5	5 to below 7·5	7·5 to below 10	10 to below 12·5	12·5 to below 15	15 to below 17·5	17·5 to below 20	20 to below 22·5	22·5 to below 25	25 to below 27·5	27·5 to below 30	30 & above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50	2	1	2	5	3	1	5	1	1	3	...	...	24
-50 to below 0	10	8	9	9	7	4	1	2	...	1	...	...	51
0 „ „ 50	25	24	14	17	13	5	5	2	1	...	...	1	107
50 „ „ 100	13	13	19	18	11	7	6	3	2	1	...	2	95
100 „ „ 150	5	7	14	15	12	8	2	2	1	3	1	2	72
150 „ „ 200	1	4	3	3	8	2	5	1	2	...	...	1	30
200 „ „ 250	1	...	4	3	3	2	1	...	1	1	...	3	19
250 and Above	...	2	1	3	3	4	6	2	3	2	1	13	40
Total ...	57	59	66	73	60	33	31	13	11	11	2	22	438

TABLE No. 23-A.

Size of Farm in Adjusted Acres—Net Profits (1936-37).

Size of Farm Acres→ Net Profits Rs. ↓	0 to below 5	5 to below 7·5	7·5 to below 10	10 to below 12,5	12·5 and below 15	15 to below 17·5	17·5 to below 20	20 to below 22·5	22·5 to below 25	25 to below 27·5	27·5 to below 30	30 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 & above	...	1	1	2	...	1	1	...	1	1	1	1	10
50 to below 100	2	1	1	2	5	1	3	...	...	2	...	2	19
0 „ „ 50	5	2	6	9	1	3	4	1	1	...	...	3	35
-50 „ „ 0	13	18	12	7	12	7	5	1	1	1	...	3	80
-100 „ „ -50	28	15	14	11	9	3	6	2	...	...	...	1	89
-150 „ „ -100	7	18	16	16	8	8	3	5	2	1	...	2	86
-200 „ „ -150	1	4	10	16	13	5	2	1	3	2	...	5	62
-300 „ „ -200	1	...	5	9	7	4	2	1	1	...	...	2	32
below -300	...	...	1	1	5	1	5	2	2	4	1	3	25
Total ...	57	59	66	73	60	33	31	13	11	11	2	22	438

the first instance, the relation of various indices of the size of a business to income and profits.

Tables Nos. 22 and 23 correlate the number of farm acres with farm income and net profits. These acres are adjusted acres; that is, for the purposes of these tables the total number of acres in any farm have been converted in terms of a uniform acre costing Rs. 300. The grouping of farm acreages in the tables is, therefore, also made in terms of adjusted acres. These will differ in particular cases from actual acres. Data presented in the previous chapter indicated considerable variations in the average value of land per acre from village to village. It may, therefore, happen that a farm with an actual area of 10 acres may be placed in the above table, if the land is dry land of poor quality, in the class of below 5 acres; and on the contrary, if the land is rich and well irrigated, in a class much above the 10 acres class. It is necessary to remember this in interpreting these tables.

It is not surprising that the table should reveal a general association of larger sizes of farms with larger farm incomes. Farms below 7·5 acres show very few cases of incomes above Rs. 200 and the proportion of these high incomes tends to rise with the increase in the size of farms. The group of largest sized farms contributes also most to the largest income group. It should, however, be observed that the tendency of numbers in higher income groups to rise in proportion to size, is not well marked in farm groups of the size of 17·5 acres and above. It is equally noteworthy that apart from a small increase in the proportions falling within the income groups above Rs. 150, there is little difference in the distribution, as between the other classes of income groups, among farms with sizes varying in size from 7·5 acres to 15 acres. Even the highest farm size group is represented in the negative income groups.

The correlation of net profits with size of farms does not reveal equally clear tendencies. The table shows in the first instance that if the small size farms do not make high profits, they are also not liable to suffer heavy losses. Thus while farms above 17·5 acres in size show 29 cases of positive profit, they also show 31 cases of loss greater than Rs. 200. The two smallest size groups show a profit making capacity which is distinctly less than the average. But in the size groups between 7·5 acres to 17·5 acres there is no marked difference in the distribution of the members of the different groups as between the various profit and loss groups.

Briefly, these tables indicate that with a holding of less than 7·5 adjusted acres there is little chance of making a fair sized farm income and a much less than average chance of making a profit; that the highest size groups show the highest farm incomes, the highest profits as well as the biggest losses, and that in the intermediate class of farms, of from 7·5 to 15 or 17·5 adjusted acres, in which the bulk of the farms fall, the capacity to make large incomes or the capacity to earn profits is not significantly connected with variation in size.

2. Total Expenditure

Another criterion of the size of a business is the total expenditure incurred during the year on the business. Tables Nos. 24 and 25 present data regarding farms divided into groups, by size of annual expenditure and related to the size of the farm income earned or net profits made by them.

As might have been expected these tables indicate relations very similar to those revealed by the tables regarding size in acres. The smallest expenditure groups are associated with the lowest farm incomes; and as the scale of expenditure increases, the proportion of farms falling in the higher income groups also increases. In connection with net profits, farms with higher expenditures again show a much greater liability to large losses. This liability to large losses is specially apparent in groups of expenditure above the Rs. 300 level.

3. Labour Units

Somewhat similar relations are revealed by data regarding total labour units employed during the year in farm business which may be considered as another index of size. These data are presented in tables Nos. 26 and 27.

4. Live-stock Units

The indices so far used relate to the general volume of the farmer's business and have special relation to crop production. That part of the farm business which deals with live-stock may, however, not be directly related to the size of crop production. It is necessary to inquire what influence the size of live-stock business has on the farmer's income and profits. Data relating to this aspect are presented in the tables Nos. 28 and 29.

The live-stock units in these tables are expressed in terms of standard animal units. The scale of conversion used has been indicated in Chapter IV. The farm income table indicates that there is a general tendency for the live-stock units maintained to increase as the farm income increases. Businesses with less than 2

TABLE No. 24.
Total Farm Expenditure—Farm Income (1937-38).

Farm Expenditure Rs. → / Farm Income Rs. ↓	Below 100	100 to below 150	150 to below 200	200 to below 250	250 to below 300	300 to below 350	350 to below 400	400 to below 500	500 to below 600	600 to below 800	800 to below 1,000	1,000 & above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50 ...	...	1	2	6	5	6	3	4	1	2	1	2	33
-50 to below 0 ...	7	12	12	11	8	7	10	6	3	...	...	...	76
0 " " 50 ...	8	28	30	16	20	15	6	5	3	...	3	...	134
50 " " 100 ...	3	13	24	21	21	12	10	9	7	2	...	...	122
100 " " 150 ...	...	3	13	9	18	8	8	12	7	...	3	...	81
150 " " 200 ...	1	2	1	3	5	4	4	8	3	1	...	...	32
200 " " 250 ...	...	1	1	2	6	8	5	2	1	2	...	...	28
250 and above ...	...	1	...	1	2	4	5	8	6	13	2	9	51
Total ...	19	61	83	69	85	64	51	54	31	20	9	11	557

TABLE No. 25.
Total Farm Expenditure—Net Profits (1937-38).

Farm Expenditure Rs. → / Net Profits. Rs. ↓	Below 100	100 to below 150	150 to below 200	200 to below 250	250 to below 300	300 to below 350	350 to below 400	400 to below 500	500 to below 600	600 to below 800	800 to below 1,000	1,000 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	...	1	...	1	...	2	...	3	1	5	1	3	17
50 to below 100	1	2	1	2	3	2	1	2	1	3	...	1	19
0 „ „ 50	...	3	5	3	7	4	6	7	2	3	...	...	40
-50 „ „ 0	7	11	15	9	13	13	6	5	5	3	1	...	88
-100 „ „ -50	8	29	26	18	16	8	12	5	3	1	...	...	126
-150 „ „ -100	3	13	20	21	20	12	7	8	4	...	1	...	109
-200 „ „ -150	...	2	14	12	19	8	6	10	8	2	...	...	81
-300 „ „ -200	...	...	2	2	6	13	12	10	5	3	2	3	58
Below -300	...	...	...	1	1	2	1	4	2	...	4	4	19
Total ...	19	61	83	69	85	64	51	54	31	20	9	11	557

TABLE No.
Total Farm Expenditure—Farm Income (1936-37

Farm Expenditure Rs. → / Farm Income Rs. ↓	Below 100	100 to below 150	150 to below 200	200 to below 250	250 to below 300	300 to below 350	350 to below 400	400 to below 500	500 to below 600	600 to below 800	800 to below 1,000	1,000 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below-50	...	...	1	2	2	2	3	5	7	1	1	...	24
-50 to Below 0	3	8	4	10	7	3	3	9	4	...	...	...	51
0 „ „ 50	5	26	16	17	19	6	10	4	3	1	...	...	107
50 „ „ 100	2	13	16	22	13	14	6	5	2	2	...	...	95
100 „ „ 150	1	5	8	11	14	14	7	3	5	2	2	...	72
150 „ „ 200	...	1	2	5	4	5	4	3	5	1	...	...	30
200 „ „ 250	...	...	...	4	5	1	2	3	2	1	...	1	19
250 and Above	...	...	...	...	5	4	3	6	5	8	6	3	40
Total ...	11	53	47	71	69	49	38	38	33	16	9	4	438

TABLE No. 25-A.
Total Farm Expenditure—Net Profits (1936-37).

Farm Expenditure Rs. → / Net Profits Rs. ↓	Below 100	100 to below 150	150 to below 200	200 to below 250	250 to below 300	300 to below 350	350 to below 400	400 to below 500	500 to below 600	600 to below 800	800 to below 1,000	1,000 and above	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and Above	...	...	...	...	3	...	...	3	1	1	2	...	10
50 to below 100	...	1	...	2	4	3	2	2	3	1	1	...	19
0 „ „ 50	...	3	4	8	5	5	2	3	2	3	...	...	35
-50 „ „ 0	4	17	8	13	8	10	9	4	3	2	2	...	80
-100 „ „ -50	7	21	12	16	15	6	4	2	5	1	...	...	89
-150 „ „ -100	...	11	13	19	16	9	8	4	2	3	...	1	86
-200 „ „ -150	...	...	8	11	14	11	7	4	3	...	2	2	62
-300 „ „ -200	...	...	2	2	4	4	3	10	5	2	...	...	32
below -300	...	...	...	...	...	1	3	6	9	3	2	1	25
Total ...	11	53	47	71	69	49	38	38	33	16	9	4	438

TABLE No. 26.

Total Labour Units Utilised—Farm Income (1937-38).

Labour Units→ Farm Income Rs. ↓	below 0·75	0·75 to below 1·00	1·00 to below 1·25	1·25 to below 1·50	1·50 to below 1·75	1·75 to below 2·00	2·00 to below 2·50	2·50 to below 3·00	3·00 to below 4·00	4·00 and above	Total
	1	2	3	4	5	6	7	8	9	10	11
Below -50	6	8	8	3	2	3	1	...	1	1	33
-50 to below 0 ...	24	15	17	6	8	3	3	...	...	...	76
0 ,, ,, 50 ...	37	40	27	17	5	...	4	2	2	...	134
50 ,, ,, 100 ...	21	33	29	14	11	7	5	2	...	...	122
100 ,, ,, 150 ...	4	18	17	14	10	6	6	5	1	...	81
150 ,, ,, 200 ...	2	5	3	8	5	6	2	1	...	...	32
200 ,, ,, 250 ...	...	4	7	10	4	...	2	...	1	...	28
250 and above	...	5	3	9	1	10	9	6	4	4	51
Total ...	94	128	111	81	46	35	32	16	9	5	557

TABLE No. 27.

Total Labour Units Utilised—Net Profits (1937-38).

Labour Units→ Net Profits Rs. ↓	below 0·75	0.75 to below 1·00	1·00 to below 1·25	1·25 to below 1·50	1·50 to below 1·75	1·75 to below 2·00	2·00 to below 2·50	2·50 to below 3·00	3·00 to below 4·00	4·00 and above	Total
	1	2	3	4	5	6	7	1	9	10	11
100 and above	...	3	...	4	...	3	4	2	...	1	17
50 to below 100 ...	...	6	2	5	1	1	2	1	1	...	19
0 ,, ,, 50 ...	7	9	9	5	3	4	2	1	...	...	40
-50 ,, ,, 0 ...	21	26	19	11	2	3	4	1	1	...	88
-100 ,, ,, -50 ...	42	31	25	12	8	6	2	...	...	...	126
-150 ,, ,, -100 ...	16	32	28	18	6	7	1	1	...	...	109
-200 ,, ,, -150 ...	7	13	16	21	12	5	6	1	...	...	81
-300 ,, ,, -200 ...	1	7	11	5	13	4	8	4	4	1	58
Below -300	...	1	1	...	1	2	3	5	3	3	19
Total ...	94	128	111	81	46	35	32	16	9	5	557

TABLE No. 26-A.

Total Labour Units Utilised—Farm Income (1936-37).

Labour Units→ / Farm Income Rs. ↓	below 0·75	0·75 to below 1·00	1·00 to below 1·25	1·25 to below 1·50	1·50 to below 1·75	1·75 to below 2·00	2·00 to below 2·50	2·50 to below 3·00	3·00 to below 4·00	4·00 and above	Total
	1	2	3	4	5	6	7	8	9	10	11
Below -50	3	1	2	3	6	3	6	...	...	...	24
-50 to below 0	14	10	10	4	8	1	4	...	...	...	51
0 " " 50	28	24	26	19	6	1	...	3	...	...	107
50 " " 100	13	30	19	18	8	3	2	1	1	...	95
100 " " 150	6	18	15	14	11	2	2	3	...	1	72
150 " " 200	...	4	10	6	3	2	2	2	1	...	30
200 " " 250	...	1	7	2	4	2	3	...	...	...	19
250 and above	...	1	3	5	5	6	7	6	3	4	40
Total...	64	89	92	71	51	20	26	15	5	5	438

TABLE No. 27-A.

Total Labour Units Utilised—Net Profits (1936-37).

Labour Units → / Net Profits Rs. ↓	below 0·75	0.75 to below 1·00	1·00 to below 1·25	1·25 to below 1·50	1·50 to below 1·75	1·75 to below 2·00	2·00 to below 2·50	2·50 to below 3·00	3·00 to below 4·00	4·00 and above	Total
	1	2	3	4	5	6	7	8	9	10	11
100 and above	...	1	1	2	1	1	1	3	...	...	10
50 to below 100	...	4	6	2	2	4	1	...	...	...	19
0 " " 50	4	7	13	2	6	1	1	1	...	...	35
-50 " " 0	23	21	11	11	4	3	4	...	3	...	80
-100 " " -50	25	23	21	10	4	3	2	1	...	...	89
-150 " " -100	7	21	20	17	12	3	4	1	...	1	86
-200 " " -150	2	10	15	17	11	1	2	3	...	1	62
-300 " " -200	3	2	5	6	7	1	5	2	1	...	32
Below -300	...	...	...	4	4	3	6	4	1	3	25
Total ...	64	89	92	71	51	20	26	15	5	5	438

TABLE No. 28.
Total Live-Stock Units—Farm Income (1937-38).

Live-Stock Units → Farm Income Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to below 7	7 and above	Total
	1	2	3	4	5	6	7	8	9
Below -50	1	4	8	9	6	2	1	2	33
-50 to below 0	4	16	12	21	15	3	4	1	76
0 " " 50	...	24	47	32	18	9	3	1	134
50 " " 100	1	17	43	34	13	7	5	2	122
100 " " 150	...	5	23	17	20	7	6	3	81
150 " " 200	1	1	7	12	5	...	3	3	32
200 " " 250	...	2	5	9	6	3	...	3	28
250 and above	...	...	4	10	9	9	5	14	51
Total	7	69	149	144	92	40	27	29	557

TABLE No. 29.
Total Live-Stock Units—Net Profits (1937-38).

Live-Stock Units → Net Profits Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to below 7	7 and above	Total
	1	2	3	4	5	6	7	8	9
100 and above	...	...	3	2	1	3	3	5	17
50 to below 100	1	1	...	7	4	3	...	3	19
0 " " 50	1	4	12	10	9	3	...	1	40
- 50 " " 0	...	15	37	19	8	3	4	2	88
-100 " " - 50	1	25	43	35	14	3	2	3	126
-150 " " -100	3	12	30	31	16	8	6	3	109
-200 " " -150	1	8	15	24	21	6	4	2	81
-300 " " -200	...	4	8	13	17	5	6	5	58
Below -300	...	...	1	3	2	6	2	5	19
Total ...	7	69	149	144	92	40	27	29	557

TABLE No. 28-A.
Total Live-Stock Units—Farm Income (1936-37).

Live-Stock Units → Farm Income Rs. ↓	below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to below 7	7 and above	Total
	1	2	3	4	5	6	7	8	9
Below -50	...	3	6	5	4	1	5	...	24
-50 to below 0	1	9	13	8	14	6	...	...	51
0 „ „ 50	...	25	31	28	17	3	2	1	107
50 „ „ 100	...	21	28	32	8	3	2	1	95
100 „ „ 150	...	9	21	18	12	8	3	1	72
150 „ „ 200	...	2	12	7	3	2	1	3	30
200 „ „ 250	...	...	5	7	3	2	1	1	19
250 and above	...	1	2	8	10	7	3	9	40
Total ...	1	70	118	113	71	32	17	16	438

TABLE No. 29-A.
Total Live-Stock Units—Net Profits (1936-37).

Live-Stock Units → Net Profits Rs. ↓	below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to below 7	7 and above	Total
	1	2	3	4	5	6	7	8	9
100 and Above	...	1	...	2	4	...	1	2	10
50 to below 100	...	...	6	8	4	...	1	...	19
0 „ „ 50	...	6	15	7	2	5	...	...	35
-50 „ „ 0	...	23	22	15	13	4	2	1	80
-100 „ „ -50	...	20	28	24	7	4	3	3	89
-150 „ „ -100	1	11	22	29	12	6	2	3	86
-200 „ „ -150	...	5	18	16	12	7	1	3	62
-300 „ „ -200	...	2	4	7	12	2	1	1	32
below -300	...	2	3	5	5	4	3	3	25
Total	1	70	118	113	71	32	17	16	438

units of live-stock fall overwhelmingly below the Rs. 100 limit of farm incomes. Large incomes are usually associated with a large holding of live-stock. It has, however, to be noticed that among groups of farmers holding large numbers of live-stock units, except in the group of those who hold 7 units and more the proportion of numbers falling in the negative farm income groups may be as large as the proportion of those falling in the highest farm income groups. The net profits table shows, as in other cases, that while with a small size of the live-stock business it may be more difficult to make any net profit, there is also, in the circumstances, a much smaller risk of high losses. In fact, this table seems to show a somewhat greater association of larger size with large losses than was revealed by the table relating to farm acres. Thus while businesses with a holding of 5 or more than 5 animal units reveal 21 cases of net profits, they also reveal 29 cases of losses greater than Rs. 200.

5. Crop Combinations

We may now turn to consider a different kind of factor that may affect profitability. This is the type of farming practised by the farmer. For the purpose of this analysis we utilise the classification of farmers according to the combinations of crops grown by them, which has been described and used in the last chapter. Tables Nos. 29 and 30 present data regarding farmers classified according to crop combinations grown by them and the farm incomes and net profits earned.

These tables indicate some very marked associations. All farmers in classes 1, 3 and 4 (i. e. those growing only the jowar-bajri group or those growing jowar-bajri, wheat and gram, and those growing jowar-bajri, wheat and gram, and groundnut) fall within the small or negative income groups. The tendency is specially marked in the pure jowar-bajri group. The distribution of members in the dominant class 2 (jowar-bajri, groundnut) and in class 5 (jowar-bajri and irrigated crops) is much the same as the average distribution for the whole sample. The same remarks apply to the numerically very small classes 7 and 8 (i. e. jowar-bajri, irrigated crops, wheat and gram, and groundnut). In class 6 (jowar-bajri, irrigated crops and groundnut) the proportion in the highest income classes is somewhat larger than it is in the average, the distribution of its other members, however, follows the average pattern. Among the money crop classes both turmeric (No. 9) and the combined class (No. 12) reveal marked concentration in the highest farm income classes and the combined class is not at all represented in the negative group of farm incomes.

TABLE No. 30.
Crop Combinations—Farm Income (1937-38).

Crop Combinations → / Farm Income Rs. ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-gram	J-B; Groundnut; Wheat-gram	J-B; Irrigated Crops	J-B; Irrigated Crops; Gnt.	J-B; Irri-Crops; Wheat-gram.	J-B; Irri. Crops; Wheat-gram; Gnt.	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50	6	9	...	5	3	7	1	...	1	1	...	...	33
-50 to below 0	11	34	3	6	6	12	...	1	2	1	...	...	76
0 „ „ 50	17	65	4	9	8	25	...	2	1	1	...	2	134
50 „ „ 100	3	58	2	4	14	24	4	2	6	...	...	5	122
100 „ „ 150	3	33	...	3	12	13	...	2	9	...	1	5	81
150 „ „ 200	...	14	...	1	5	9	1	...	...	1	...	1	32
200 „ „ 250	...	14	...	...	2	7	...	...	3	1	...	1	28
250 and above	...	17	...	...	4	10	1	1	8	...	...	10	51
Total	40	244	9	28	54	107	7	8	30	5	1	24	557

TABLE No. 31.
Crop Combinations—Net Profits (1937-38).

Crop Combinations → / Net Profits Rs. ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-gram	J-B; Groundnut; Wheat-gram	J-B; Irrigated Crops	J-B; Irrigated Crops; Gnt.	J-B; Irri. Crops; Wheat-gram.	J-B; Irri. Crops; Wheat-gram; Gnt.	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	...	7	...	...	2	3	...	1	1	...	...	3	17
50 to below 100	...	12	...	...	...	1	1	...	3	...	...	2	19
0 „ „ 50	...	22	...	...	2	9	...	...	6	...	...	1	40
-50 „ „ 0	4	49	1	2	9	15	...	1	4	...	...	3	88
-100 „ „ -50	7	67	4	4	10	20	3	1	8	...	...	2	126
-150 „ „ -100	12	47	1	9	11	18	1	2	4	1	1	2	109
-200 „ „ -150	7	29	2	7	10	20	...	1	2	1	...	2	81
-300 „ „ -200	8	11	1	5	6	16	1	...	1	2	...	7	58
Below -300	2	...	...	1	4	5	1	2	1	1	...	2	19
Total	40	244	9	28	54	107	7	8	30	5	1	24	557

TABLE No. 30-A.

Crop Combinations—Farm Income (1936-37).

Crop Combinations → / Farm Income Rs. ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-Gram	J-B; Wheat-Gram; Groundnut	J-B; Irrigated Crops	J-B; Irrigated Crops; G-nut	J-B; Irri. Crops; Wheat-Gram	J-B; Irri. Crops; Wheat-Gram;Gnut	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50	3	10	...	1	2	6	...	...	1	...	...	1	24
-50 to below 0	9	19	...	4	9	6	1	...	...	...	...	3	51
0 " " 50	18	48	6	5	14	9	1	3	...	3	...	...	107
50 " " 100	3	49	3	10	3	20	1	2	1	...	...	3	95
100 ' " 150	1	36	1	9	7	12	2	2	1	...	...	1	72
150 " " 200	...	14	...	2	3	6	...	3	...	2	...	...	30
200 " " 250	...	10	...	3	2	1	...	...	1	1	...	1	19
250 and above	1	19	...	2	3	4	2	2	1	3	...	3	40
Total ...	35	205	10	36	43	64	7	12	5	9	...	12	438

TABLE No. 31-A.

Crop Combinations--Net Profits (1936-37).

Crop Combinations → / Net Profits Rs. ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-Gram	J-B; Wh.-Gram; Groundnut	J-B; Irrigated Crops	J-B; Irrigated Crops; G. nut	J-B; Irri. Crops; Wheat-Gram	J-B; Irri. Crops; Wheat-Gram;Gnut	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	...	9	...	...	...	...	...	...	...	1	...	...	10
50 to below 100	1	11	...	...	3	1	...	1	...	2	...	...	19
0 " " 50	1	21	...	5	1	3	...	1	2	...	...	1	35
-50 " " 0	6	43	2	13	4	6	2	1	...	2	...	1	80
-100 " " -50	11	48	3	6	4	12	...	2	...	2	...	1	89
-150 " " -100	9	31	5	6	12	15	4	2	...	1	...	1	86
-200 " " -150	4	26	...	4	6	13	...	4	2	...	...	3	62
-300 " " -200	1	13	...	1	9	5	1	...	...	...	...	2	32
Below -300	2	3	...	1	4	9	...	1	1	1	...	3	25
Total ...	35	205	10	36	43	64	7	12	5	9	...	12	438

The picture is somewhat changed when we turn to the net profits table. There is no change in respect of classes 1, 3 and 4. No farmer growing these crop-combinations earns a net profit; and the incidence of losses on them is much greater than the average. The position of classes 5 and 6 is changed for the worse. Class 5 has few members earning net profits and class 6 also has a number earning profits which is distinctly less in proportion than the average. The distribution of numbers in both these classes among groups suffering losses is again worse than the average. Here also members of group 5 are worse off than members of group 6. The position of class 2 is, on the other hand, bettered. In respect both of representation in the net profits groups and the distribution of members in the loss groups, the position of members in class 2 is better than the average. The money crop groups show good results from the point of view of net profits also, a third of the turmeric farmers and a fourth of the combined money crop farmers earning net profits. The results are not, however, as good as those revealed by the farm income tables. And while in the farm income table the distribution of members in class 12 was a little better than that of members of class 9, the position is reversed in relation to net profits. It should be noted that a large number of farmers in the combined money crops class—class 12—make large losses.

The tables given above indicate profitability and incomes being distinctly associated with some types of farming and not with others. It is necessary before coming to any definite conclusion however, to assure oneself that this association is not the result of some factor other than the crop combinations. In this instance the chief factor that has to be studied is the possible association of types of farming with the size of the business. If, for examaple, it was found that farmers in class 1 (jowar-bajri) were almost all concentrated in the smallest sizes of farms, the incidence of loss may as well be due to the size of the farm as to the type of farming. A table was, therefore, compiled to show the distribution of various types of farming among the different groups of size of farms by acres.

This table No. 32 clearly shows that no particular size group is specially associated with any particular crop-combination. The non-irrigated crop combinations have broadly greater representation in the smaller size groups than combinations containing irrigated crops. It should, however, be observed that both classes 1 and 2 of crop-combinations, which show very different results regarding incomes and profits, are almost equally well represented in the two lowest size groups. The table, therefore, disproves the contention that the

TABLE No. 32.

Crop Combinations — Size of Farm (Adjusted Acres) (1937-38).

Crop Combinations → / Size of Farm Adjusted Acres ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-gram	J-B; Groundnut; Wheat-gram	J-B; Irrigated Crops	J-B; Irrigated Crops; Groundnut	J-B; Irri.-Crops; Wheat-gram	J-B; Irri.-Crops Wheat-gram;Gn;ut	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
0 to below 5·0	8	45	2	1	3	8	...	...	1	...	...	...	68
5·0 „ „ 7·5	5	45	3	7	7	9	...	...	3	1	...	...	80
7·5 „ „ 10·0	7	38	1	6	5	15	2	1	9	...	...	1	85
10·0 „ „ 12·5	8	33	2	3	16	17	...	3	3	1	...	3	89
12·5 „ „ 15·0	8	36	1	1	6	22	...	1	4	1	1	4	85
15·0 „ „ 17·5	1	15	...	6	3	11	3	1	3	1	...	1	45
17·5 „ „ 20·0	2	10	...	1	2	10	...	...	2	...	...	4	31
20·0 „ „ 22·5	...	10	...	1	4	1	...	...	1	...	...	3	20
22·5 „ „ 25·0	...	2	...	1	1	2	2	1	1	...	...	...	10
25·0 „ „ 27·5	1	2	...	...	3	2	...	...	...	1	...	...	9
27·5 „ „ 30·0	...	3	...	...	1	4	...	...	...	...	...	1	9
30·0 and above	...	5	...	1	3	6	...	1	3	...	...	7	26
Total ...	40	244	9	28	54	107	7	8	30	5	1	24	557

TABLE No. 32-A.

Crop Combinations — Size of Farm (Adjusted Acres) (1936-37).

Crop Combinations → / Size of Farm Adjusted Acres ↓	Jowar-Bajri	J-B; Groundnut	J-B; Wheat-gram	J-B; Groundnut; Wheat-gram	J-B; Irrigated Crops	J-B; Irri. Crops; Groundnut	J-B; Irri. Crops; Wheat-gram	J-B; Irri. Crops; Wheat-gram; Gnut	Turmeric	Potatoes	Sugarcane	Combined	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
0 to below 5·0	12	33	1	4	2	2	...	...	...	3	...	...	57
5·0 „ „ 7 5	10	33	3	4	2	2	2	1	...	1	...	1	59
7·5 „ „ 10·0	2	27	2	7	7	11	1	3	...	2	...	4	66
10·0 „ „ 12·5	4	34	1	6	10	13	2	3	...	...	...	...	73
12·5 „ „ 15·0	5	29	2	4	6	13	...	...	...	...	...	1	60
15·0 „ „ 17·5	...	14	...	7	6	4	...	...	1	...	...	1	33
17·5 „ „ 20·0	1	12	...	2	2	8	...	1	2	2	...	1	31
20·0 „ „ 22·5	1	4	1	1	...	4	1	...	...	...	...	1	13
22·5 „ „ 25·0	...	7	...	...	1	1	...	2	...	...	...	...	11
25·0 „ „ 27·5	...	3	...	...	2	3	...	2	1	...	...	...	11
27·5 „ „ 30·0	...	1	...	...	...	...	...	...	...	...	...	1	2
30·0 and above	...	8	...	1	5	3	1	...	1	1	...	2	22
Total ...	35	205	10	36	43	64	7	12	5	9	...	12	438

TABLE No. 33.

Percentage of Irrigated to total adjusted Acreage—Farm Income (1937-38).

% of Irrigated → Farm Income Rs. ↓	Nil	Above 0% to below 10%	Above 10% to below 20%	Above 20% to below 30%	Above 30% to below 40%	Above 40% to below 50%	Above 50% to below 60%	Above 60% to below 70%	Above 70% to below 80%	Above 80% to below 90%	Above 90% to below 100%	100%	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50	11	4	5	5	3	3	2	...	...	...	...	...	33
-50 to below 0	22	14	14	12	5	3	3	1	1	1	...	...	76
0 „ „ 50	56	17	19	19	5	7	6	1	1	2	...	1	134
50 „ „ 100	45	15	20	10	17	11	3	1	...	...	...	...	122
100 „ „ 150	29	11	11	4	15	6	2	2	1	...	...	...	81
150 „ „ 200	11	1	5	3	8	3	...	1	...	...	...	...	32
200 „ „ 250	12	2	2	7	1	2	...	1	...	1	...	...	28
250 and above.	11	8	6	7	10	4	3	...	1	...	1	...	51
Total ...	197	72	82	67	64	39	19	7	4	4	1	1	557

TABLE No. 34.

Percentage of Irrigated to total adjusted Acreage—Net Profits (1937-38).

% of Irrigated → Net Profits Rs. ↓	Nil	Above 0% to below 10%	Above 10% to below 20%	Above 20% to below 30%	Above 30% to below 40%	Above 40% to below 50%	Above 50% to below 60%	Above 60% to below 70%	Above 70% to below 80%	Above 80% to below 90%	Above 90% to below 100%	100%	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	5	2	1	3	3	...	2	...	...	...	1	...	17
50 to below 100	10	1	3	...	3	...	1	...	1	...	...	...	19
0 „ „ 50	21	5	3	4	3	2	...	1	1	...	...	...	40
-50 „ „ 0	40	11	11	10	6	8	1	...	...	1	...	...	88
-100 „ „ -50	47	16	18	12	16	9	3	2	1	1	...	1	126
-150 „ „ -100	45	14	12	14	13	6	4	1	...	...	...	...	109
-200 „ „ -150	20	11	20	10	8	6	4	1	...	1	...	...	81
-300 „ „ -200	8	9	11	10	7	7	3	1	1	1	...	...	58
Below -300	1	3	3	4	5	1	1	1	...	...	...	...	19
Total ...	197	72	82	67	64	39	19	7	4	4	1	1	557

TABLE No. 33-A.

Percentage of Irrigated to total adjusted Acreage—Farm Income (1936-37).

% of Irrigated → / Farm Income Rs. ↓	*Nil* i. e. 0%	Above 0% to below 10%	10% to below 20%	20% to below 30%	30% to below 40%	40% to below 50%	50% to below 60%	60% to below 70%	70% to below 80%	80% to below 90%	90% to below 100%	100%	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Below -50	3	5	5	6	4	1	...	...	...	...	...	...	24
-50 to below 0	18	2	12	10	4	1	2	2	...	...	...	...	51
0 " " 50	34	12	23	17	8	6	4	1	...	1	...	1	107
50 " " 100	37	8	23	15	5	3	2	...	1	1	...	...	95
100 " " 150	33	13	6	7	4	4	3	1	1	...	...	...	72
150 " " 200	13	4	3	5	3	1	1	...	...	...	...	...	30
200 " " 250	11	1	2	3	2	...	...	...	...	...	...	...	19
250 and above	17	7	5	3	5	1	2	...	...	...	...	...	40
Total ...	166	52	79	66	35	17	14	4	2	2	...	1	438

TABLE No. 34-A.

Percentage of Irrigated to total adjusted Acreage—Net Profits (1936-37).

% of Irrigated → / Net Profits Rs. ↓	*Nil* i. e. 0%	Above 0% to below 10%	10% to below 20%	20% to below 30%	30% to below 40%	40% to below 50%	50% to below 60%	60% to below 70%	70% to below 80%	80% to below 90%	90% to below 100%	100%	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
100 and above	7	2	...	...	...	...	1	...	...	...	...	...	10
50 to below 100	9	5	2	1	2	...	...	...	...	...	...	...	19
0 " " 50	26	1	...	2	3	2	1	...	...	...	...	...	35
- 50 " " 0	45	13	8	8	4	...	1	...	...	1	...	...	80
-100 " " - 50	35	9	15	12	3	5	6	1	1	1	...	1	89
-150 " " -100	24	6	27	16	7	3	2	1	...	...	...	...	86
-200 " " -150	15	7	16	13	5	5	...	...	1	...	...	...	62
-300 " " -200	4	5	7	6	4	1	3	2	...	...	...	...	32
Below -300	1	4	4	8	7	1	...	...	...	...	...	...	25
Total ...	166	52	79	66	35	17	14	4	2	2	...	1	438

TABLE No. 35.

Percentage of Owned to total Adjusted Acreage—Farm Income (1937-38)

% of owned → Farm Income Rs. ↓	All Owned	75%—below 100%	50%—below 75%	25%—below 50%	Above 0%—below 25%	All Tenanted	Total
	1	2	3	4	5	6	7
Below -50	9	6	6	7	3	2	33
-50 to below 0	31	6	13	17	9	...	76
0 " " 50	47	20	28	19	18	2	134
50 " " 100	43	17	27	16	15	4	122
100 " " 150	18	13	20	20	9	1	81
150 " " 200	11	3	7	7	2	2	32
200 " " 250	5	8	9	3	2	1	28
250 and above	25	9	8	5	4	...	51
Total ...	189	82	118	94	62	12	557

TABLE No. 36.

Percentage of Owned to total Adjusted Acreage—Net Profits (1937-38).

% of owned → Net Profits Rs. ↓	All Owned	75%—below 100%	50%—below 75%	25%—below 50%	Above 0%—below 25%	All Tenanted	Total
	1	2	3	4	5	6	7
100 and above	6	2	3	2	3	1	17
50 to below 100	9	3	3	3	1	...	19
0 " " 50	8	6	11	6	7	2	40
-50 " " 0	22	12	17	20	14	3	88
-100 " " -50	51	11	26	19	16	3	126
-150 " " -100	38	17	26	18	8	2	109
-200 " " -150	29	16	17	10	8	1	81
-300 " " -200	19	10	11	13	5	...	58
Below -300	7	5	4	3	...	...	19
Total ...	189	82	118	94	62	12	557

TABLE No. 35-A.
Percentage of Owned to Total Adjusted Acreage—Farm Income (1936-37).

% of owned → Farm Income Rs. ↓	All owned	75% and below 100%	50%—below 75%	50%—below 75%	Above 0%—below 25%	All Tenanted	Total
	1	2	3	4	5	6	7
Below -50	9	4	6	2	2	1	24
-50 to below 0	15	10	8	12	5	1	51
0 " " 50	42	8	23	18	13	3	107
50 " " 100	34	15	15	16	10	5	95
100 " " 150	23	9	14	14	12	...	72
150 " " 200	10	4	9	4	3	...	30
200 " " 250	4	2	4	8	1	...	19
250 and Above	18	9	7	2	3	1	40
Total	155	61	86	76	49	11	438

TABLE No. 36-A.
Percentage of Owned to Total Adjusted Acreage—Net Profits (1936-37).

% of owned → Net Profits Rs. ↓	All owned	75% — below 100%	50% — below 75%	25% — below 50%	Above 0% — below 25%	All Tenanted	Total
	1	2	3	4	5	6	7
100 and Above	6	1	1	1	1	...	10
50 to below 100	1	3	6	5	3	1	19
0 " " 50	12	5	3	7	6	2	35
-50 " " 0	20	12	22	10	15	1	80
-100 " " -50	39	6	14	17	9	4	89
-150 " " -100	36	12	10	17	9	2	86
-200 " " -150	20	10	16	13	2	1	62
-300 " " -200	8	7	11	4	2	...	32
Below -300	13	5	3	2	2	...	25
Total	155	61	86	76	49	11	438

relation of crop-combinations to incomes and profits may be due to the distribution of farms among size groups.

6. Proportion of Irrigated Area

Another consideration regarding the type of farming, whose relation with profitability it would be interesting to ascertain, is the proportion of irrigated area to the total holding of the farmer. It would be useful to know if facts reveal a necessary minimum holding of irrigated land, before profit can be obtained in this tract from the business of farming. Tables Nos. 33 and 34 present data relating to the varying proportions of irrigated land in individual farms and their relation to classes of farm incomes and net profits obtained.

The data, in these tables, are presented in terms of standard adjusted acres. It will be observed that there was included in our sample a large number (197) of farms with no portion of the farm area under irrigation. Further only a small number had a proportion larger than 50% of the farm acreage under irrigation. These proportions are in terms of adjusted acres. As, in the scale of conversion, an irrigated acre is rated more highly than the dry acre, the percentages in terms of adjusted acres tend to show a larger proportion under irrigation than would be the case in terms of actual acres.

The farm income table shows, on the whole, an average distribution within the different income groups for the entirely dry group, with a less than average representation only in the highest farm income group. The table also shows a distribution better than the average only for irrigated groups with 20% and above under irrigation. The net profits table, however, shows the dry farms as a whole as being distinctly better off than the irrigated farms as a class. The non-irrigated farms have not only a better representation than the average in the net profits classes but have also a much smaller proportion of their numbers in the largest loss classes than the average. The net profits table does not also reveal any definite trend towards a larger profit or a smaller loss being made as the proportion of irrigated land to total farm acres increases. Our data do not thus show the availability of irrigation as a significant factor on which incomes and profits can be said to have depended.

7. Tenure

Another point of view from which the data could be analysed is the tenure of the operator. Tables Nos. 35 and 36 present the necessary data in this connection. It will be observed that there is a large number of farmers (189) who own the entire farm they operate. In so far as no charge is made on account of the investment in land in calculating farm incomes one would expect a larger concentration of the owner class in the higher farm income groups as compared with those who pay rent for a part of their holding. Except for a marked representation in the highest class of income groups this tendency is, however, not revealed by the table. On the other hand, the net profits test does not make the showing of the full owner class much worse either. The variations in distribution away from the average, whether in the profit or the loss classes, of the owners and of those with a varying proportion of tenanted land-holding, are in no case large enough to indicate significant association.

Another possible factor, from the tenure point of view, is the type of tenancy agreements. The most important difference in this instance is that between those who pay a cash rental and those who pay a share of the produce. Tables Nos. 37 and 38 present the relevant data. Those who hold tenanted lands fall mostly within the two classes of pure cash tenants and pure crop share tenants. Both these tables reveal the position of the pure cash tenants as being somewhat better than the position of the pure crop-share tenants. Cash tenants are better represented in both the higher farm income and the net profits groups than the crop-share tenants. It has to be observed, however, that the distribution of the members of the cash tenants class is less even than that of the class of crop-share tenants.

8. Intensity of Cultivation

It may be presumed that the degree of intensive cultivation might become a factor in determining the size of incomes and profits. We have tentatively adopted two indices of intensity of cultivation: (i) cost of labour utilised per acre and (ii) cost of manure utilised per acre. Tables Nos. 39 and 40 present data regarding cost of labour utilised per acre.

These labour costs represent the cost of all the labour utilised on the farm during the year, hired labour as well as the labour of the operator and the members of his family. It is curious that even among farm incomes, which do not allow for the cost of family labour, higher incomes are associated, not with more but, with less amounts spent on labour per acre. Naturally this association is even more marked in the net profits table than in the farm income table.

Tables Nos. 41 and 42 show the relation of the amount of expenditure on manure per adjusted acre with incomes and profits. The tables do not reveal any definite trend. The farm income table shows a small degree of concentration of the groups spending larger amounts per acre on manure, in the higher income groups.

TABLE No. 37.

Percentage of Acreage on Crop-share tenancy to Total Tenanted Adjusted Acreage—Farm Income (1937-38).

% of Crop-Share tenancy → Farm Income Rs. ↓	Tenanted Land *Nil*	100% Share	75% — below 100%	50% — below 75%	25% — below 50%	Above 0% — below 25%	All Cash 0%	Total
	1	2	3	4	5	6	7	8
Below -50 ...	9	4	2	4	6	...	8	33
-50 to below 0 ...	31	17	1	3	3	3	18	76
0 ,, ,, 50 ...	47	43	3	8	5	1	27	134
50 ,, ,, 100 ...	43	34	5	5	10	4	21	122
100 ,, ,, 150 ...	18	26	4	8	2	3	20	81
150 ,, ,, 200 ...	11	5	2	2	3	...	9	32
200 ,, ,, 250 ...	5	7	...	...	5	...	11	28
250 and above ...	25	8	2	3	1	1	11	51
Total ...	189	144	19	33	35	12	125	557

TABLE No. 38.

Percentage of Acreage on Crop-share tenancy to Total Tenanted Adjusted Acreage—Net Profits (1937-38).

% of Crop-Share tenancy → Net Profits Rs. ↓	Tenanted Land *Nil*	100% Share	75% — below 100%	50% — below 75%	25% — below 50%	Above 0% — below 25%	All Cash 0%	Total
	1	2	3	4	5	6	7	8
100 and above ...	6	3	2	...	2	...	4	17
50 to below 100 ...	9	3	...	2	...	...	5	19
0 ,, ,, 50 ...	8	11	1	2	4	2	12	40
-50 ,, ,, 0 ...	22	25	4	8	7	1	21	88
-100 ,, ,, -50 ...	51	30	4	4	6	4	27	126
-150 ,, ,, -100 ...	38	30	2	8	6	3	22	109
-200 ,, ,, -150 ...	29	25	3	5	2	1	16	81
-300 ,, ,, -200 ...	19	11	3	2	7	1	15	58
Below -300 ...	7	6	...	2	1	...	3	19
Total ...	189	144	19	33	35	12	125	557

TABLE No. 37-A.

Percentage of Acreage on Crop-share tenancy to Total Tenanted Adjusted Acreage—Farm Income (1936-37).

% of Crop-share tenancy→ Farm Income Rs. ↓	Tenanted Land *Nil*	100% Share	75% — below 100%	50% — below 75%	25% — below 50%	Above 0% — below 25%	All Cash 0%	Total
	1	2	3	4	5	6	7	8
Below -50	9	3	...	...	3	...	9	24
-50 to below 0	15	16	...	2	5	1	12	51
0 „ „ 50	42	34	3	3	4	3	18	107
50 „ „ 100	34	20	3	4	5	3	26	95
100 „ „ 150	23	17	4	8	3	2	15	72
150 „ „ 200	10	9	...	2	...	...	9	30
200 „ „ 250	4	4	...	2	1	...	8	19
250 and Above	18	7	1	3	1	1	9	40
Total ...	155	110	11	24	22	10	106	438

TABLE No. 38-A.

Percentage of Acreage on Crop-share tenancy to Total Tenanted Adjusted Acreage—Net Profits (1936-37).

% of Crop-share tenancy→ Net Profits Rs. ↓	Tenanted Land *Nil*	100% Share	75% —below 100%	50% —below 75%	25% —below 50%	Above 0% — below 25%	All Cash 0%	Total
	1	2	3	4	5	6	7	8
100 and Above	6	...	...	...	1	...	3	10
50 to below 100	1	8	1	1	...	...	8	19
0 „ „ 50	12	7	...	8	3	...	5	35
-50 „ „ 0	20	24	4	5	3	2	22	80
-100 „ „ -50	39	22	1	2	5	4	16	89
-150 „ „ -100	36	18	2	6	2	3	19	86
-200 „ „ -150	20	13	1	2	4	1	21	62
-300 „ „ -200	8	13	2	...	1	...	8	32
Below -300	13	5	...	...	3	...	4	25
Total ...	155	110	11	24	22	10	106	438

TABLE No. 39.

Cost of Labour Utilised per adjusted Acre—Farm Income (1937-38).

Labour Cost Rs.→ / Farm Income Rs.↓	below 5	5 to below 10	10 to below 15	15 to below 20	20 to below 25	25 to below 30	30 to above	Total
	1	2	3	4	5	6	7	8
Below -50	2	10	14	4	2	1	...	33
-50 to Below 0	2	26	22	13	10	2	1	76
0 „ „ 50	2	42	52	24	10	...	4	134
50 „ „ 100	1	41	46	19	10	5	...	122
100 „ „ 150	...	29	32	16	4	...	...	81
150 „ „ 200	2	16	8	5	...	1	...	32
200 „ „ 250	1	13	9	3	...	1	1	28
250 and Above	1	29	12	6	2	...	1	51
Total ...	11	206	195	90	38	10	7	557

TABLE No. 40.

Cost of Labour Utilised per adjusted Acre—Net Profits (1937-38)

Labour Cost Rs.→ / Net Profits Rs.↓	Below 5	5 to below 10	10 to below 15	15 to below 20	20 to below 25	25 to below 30	30 to above	Total
	1	2	3	4	5	6	7	8
100 and Above	...	9	4	2	1	...	1	17
50 to Below 100	1	8	7	1	...	2	...	19
0 „ „ 50	1	25	9	4	1	...	...	40
-50 „ „ 0	1	33	34	13	6	1	...	88
-100 „ „ -50	4	38	47	21	10	3	3	126
-150 „ „ -100	...	41	34	21	12	1	...	109
-200 „ „ -150	...	29	30	16	4	2	...	81
-300 „ „ -200	3	19	23	8	2	...	3	58
Below -300	1	4	7	4	2	1	...	19
Total ...	11	206	195	90	38	10	7	557

TABLE No. 39-A.
Cost of Labour Utilised per adjusted Acre--Farm Income

Labour Cost Rs.→ / Farm Income Rs. ↓	below 5 1	5 to below 10 2	10 to below 15 3	15 to below 20 4	20 to below 25 5	25 to below 30 6	30 to above 7	Total 8
Below -50	1	11	6	3	2	1	...	24
-50 to Below 0	2	16	17	11	4	1	...	51
0 „ „ 50	...	29	32	28	11	2	5	107
50 „ „ 100	3	31	34	16	8	...	3	95
100 „ „ 150	1	29	21	13	5	1	2	72
150 „ „ 200	1	12	10	1	4	1	1	30
200 „ „ 250	1	6	7	3	2	...	...	19
250 and Above	...	18	13	5	3	...	1	40
Total ..	9	152	140	80	39	6	12	438

TABLE No. 40-A.
Cost of Labour Utilised per adjusted Acre—Net profits (1936-37).

Labour Cost Rs.→ / Net Profits Rs. ↓	below 5 1	5 to below 10 2	10 to below 15 3	15 to below 20 4	20 to below 25 5	25 to below 30 6	30 to above 7	Total 8
100 and Above	...	4	3	2	1	...	...	10
50 to Below 100	2	7	6	3	1	...	...	19
0 „ „ 50	...	14	13	3	3	1	1	35
-50 „ „ 0	...	33	25	14	6	...	2	80
-100 „ „ -50	...	23	27	21	12	...	6	89
-150 „ „ -100	...	30	26	18	8	2	2	86
-200 „ „ -150	5	17	26	11	2	1	...	62
-300 „ „ -200	1	13	10	4	2	1	1	32
Below -300	1	11	4	4	4	1	...	25
Total ...	9	152	140	80	39	6	12	438

TABLE No. 41.

Manure Utilised per Adjusted Acre—Farm Income (1937-38)

Cost of Manure → Rs. Farm Income Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to above	Total
	1	2	3	4	5	6	7	8
Below -50	2	7	5	7	2	4	6	33
-50 to below 0	2	24	22	14	5	6	3	76
0 " " 50	9	42	40	21	13	2	7	134
50 " " 100	5	34	36	26	14	...	7	122
100 " " 150	2	27	20	17	6	6	3	81
150 " " 200	1	9	12	6	1	1	2	32
200 " " 250	1	8	11	6	...	...	2	28
250 and above	1	12	13	7	7	3	8	51
Total ...	23	163	159	104	48	22	38	557

TABLE No. 42.

Manure Utilised per Adjusted Acre—Net Profits (1937-38).

Cost of Manure → Rs. Net Profits Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 to above	Total
	1	2	3	4	5	6	7	8
100 and above	1	4	3	2	3	...	4	17
50 to below 100	2	3	8	2	2	1	1	19
0 " " 50	4	10	14	7	2	2	1	40
-50 " " 0	2	30	23	17	4	3	9	88
-100 " " -50	5	38	34	25	16	3	5	126
-150 " " -100	4	35	34	22	6	4	4	109
-200 " " -150	3	22	26	14	8	4	4	81
-300 " " -200	2	17	14	11	3	3	8	58
Below -300	...	4	3	4	4	2	2	19
Total ...	23	163	159	104	48	22	38	557

TABLE No. 41-A.

Manure Utilised Per Adjusted Acre—Farm Income (1936-37).

Cost of Manure → Rs. / Farm Income Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 and above	Total
	1	2	3	4	5	6	7	8
Below -50 ...	3	5	8	5	2	1	...	24
-50 to below 0 ...	3	7	25	9	3	1	3	51
0 „ „ 50 ...	4	31	39	19	6	3	5	107
50 „ „ 100 ...	7	34	28	14	7	1	4	95
100 „ „ 150 ...	2	24	21	13	7	3	2	72
150 „ „ 200 ...	3	9	7	4	6	...	1	30
200 „ „ 250 ...	1	10	5	...	3	...	...	19
250 and above ...	...	12	13	9	4	...	2	40
Total ...	23	132	146	73	38	9	17	438

TABLE No. 42-A.

Manure Utilised Per Adjusted Acre—Net Profits. (1936-37).

Cost of Manure → Rs. / Net Profits Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 6	6 and above	Total
	1	2	3	4	5	6	7	8
100 and above ...	...	2	4	2	1	...	1	10
50 to below 100 ...	2	8	5	1	3	...	...	19
0 „ „ 50 ...	1	16	5	3	7	1	2	35
- 50 „ „ 0 ...	3	22	30	15	5	1	4	80
-100 „ „ -50 ...	3	25	33	13	9	1	5	89
-150 „ „ -100 ...	7	30	24	19	4	2	...	86
-200 „ „ -150 ...	4	19	27	8	3	1	...	62
-300 „ „ -200 ...	2	7	8	6	3	3	3	32
Below -300 ...	1	3	10	6	3	...	2	25
Total ...	23	132	146	73	38	9	17	438

TABLE No. 43.

Live-Stock Products per Adjusted Acre—Farm Income (1937-38).

Live-stock Products Rs. → / Farm Income Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 7·	7·5 below 10	10 to below 15	15 to above	Total
	1	2	3	4	5	6	7	8	9	10
Below -50	5	8	5	4	6	2	1	2	...	33
-50 to below 0	6	17	10	11	11	11	6	3	1	76
0 „ „ 50	9	30	21	20	9	22	12	10	1	134
50 „ „ 100	4	23	22	14	11	21	15	7	5	122
100 „ „ 150	4	10	11	10	10	17	7	8	4	81
150 „ „ 200	2	2	5	7	1	4	5	5	1	32
200 „ „ 250	1	6	...	3	3	4	4	4	3	28
250 and above	2	5	2	8	6	14	7	3	4	51
Total ...	33	101	76	77	57	95	57	42	19	557

TABLE No. 44.

Live-Stock Products per Adjusted Acre—Net Income (1937-38).

Live-Stock Products. Rs.→ / Net Profits. Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 7·5	7·5 to below 10	10 to below 15	15 to below	Total
	1	2	3	4	5	6	7	8	9	10
100 to above	1	2	2	2	2	4	1	...	3	17
50 to below 100	2	...	...	2	1	6	2	4	2	19
0 „ „ -50	5	6	1	4	3	6	10	3	2	40
-50 „ „ 0	2	11	8	15	9	18	12	9	4	88
-100 „ „ -50	8	25	21	21	8	17	11	11	4	126
-150 „ „ -100	3	25	17	15	9	20	8	10	2	109
-200 „ „ -150	5	17	14	9	13	13	6	2	2	81
-300 „ „ -200	6	11	9	6	11	8	4	3	...	58
below -300	1	4	4	3	1	3	3	...	...	19
Total ...	33	101	76	77	57	95	57	42	19	557

TABLE No. 43-A.
Live-Stock Products per Adjusted Acre—Farm Income (1936-37).

Live-Stock Products Rs. → Farm Income Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 7.50	7.50 to below 10·0	10 to below 15	15 to above	Total
	1	2	3	4	5	6	7	8	9	10
Below -50	3	10	2	4	3	...	1	...	1	24
-50 to Below 0	2	10	16	6	2	8	3	4	...	51
0 ,, ,, 50	7	23	16	16	8	15	7	11	4	107
50 ,, ,, 100	7	21	14	11	13	10	5	8	6	95
100 ,, ,, 150	3	14	12	3	4	16	12	3	5	72
150 ,, ,, 200	2	4	2	1	5	5	4	5	2	30
200 ,, ,, 250	...	2	3	4	...	3	2	2	3	19
250 and above	...	3	2	7	4	12	4	3	5	40
Total ...	24	87	67	52	39	69	38	36	26	438

TABLE No. 44-A.
Live-Stock Products per Adjusted Acre—Net Profits (1936-37).

Live-Stock Products Rs. → Net Profits Rs. ↓	Below 1	1 to below 2	2 to below 3	3 to below 4	4 to below 5	5 to below 7.50	7.50 to below 10.0	10 to below 15	15 to above	Total
	1	2	3	4	5	6	7	8	9	10
100 to Above	...	...	...	...	1	5	1	...	3	10
50 to below 100	...	3	2	4	...	2	4	3	1	19
0 ,, ,, 50	1	6	7	2	3	6	3	3	4	35
-50 ,, ,, 0	7	12	10	7	7	12	12	9	4	80
-100 ,, ,, -50	3	15	10	13	6	19	6	8	9	89
-150 ,, ,, -100	3	20	14	11	8	12	7	9	2	86
-200 ,, ,, -150	5	17	12	5	6	11	2	3	1	62
-300 ,, ,, -200	4	6	7	6	4	2	1	1	1	32
,, -300	1	8	5	4	4	...	2	...	1	25
Total ...	24	87	67	52	39	69	38	36	26	438

The net profits table, on the other hand, indicates no such concentration. The net profits table fails to reveal any consistent trend in the association of expenditure on manure with profits and losses either way.

9. Income from Livestock Products

One other consideration is the part that income from livestock products plays in determining profitability. We have already considered whether incomes and profits are associated in any manner with the number of animal units owned. That was part of considerations relating to the size of business. In the present instance we take, not the animal units owned, but the value of products obtained from livestock. These products do not include appreciation on livestock and do not allow for any deduction for any depreciation on livestock. We have divided the total value of livestock products by the number of acres in the farm. This gives, we believe, an index of the extent to which livestock business in any particular farm is associated with crop production. We want to determine whether variations in the extent of this association have any influence on incomes and profits. Tables Nos. 43 and 44 present the relevant data. These show that especially in groups beginning with Rs. 3 and more of livestock products income per acre, there is a definitely increasing association of higher groups with higher farm incomes. The same tendency from about the same limit is also exhibited by the net profits table. It is interesting to observe that in the farm income table and especially in the net profits table the first class (livestock products below Re. 1 per acre) exhibits much better results than the two next classes (livestock products from Re. 1 to below Rs. 2 per acre, and livestock products from Rs. 2 to below Rs. 3 per acre). This may be indicative of the fact that the association of livestock business is not profitable below a certain minimum size or minimum income yielding capacity.

10. Crop Productivity

Another factor which may affect profitability is the productivity of the farm business. Incomes and profits might well depend on the per acre productivity of land. The measure devised by us for gauging the influence of this factor was the Crop Index. This was meant to be an index of the per acre productivity of each farm business. The base for the index was the average per acre productivity of the whole sample. The manner in which the crop index was compiled was as follows. The total production during the year, of any particular crop, of all the farmers included in the survey was divided by the total number of actual acres under that crop. This gave us the average per acre production for each crop for the entire sample. This was the basis. We then proceeded to calculate the per acre production of each crop of each farmer during the year. The total production of the particular crop of a farmer was divided by the number of acres under that crop in the farm during the year. In this manner the per acre production of each farmer for each important crop was calculated. For each crop the basic figure, of the average per acre production for the whole sample, was taken to be equal to 100; the proportion of the per acre production of each crop by each farm business to the regional average was calculated and reduced to an index on this basis. These calculations gave us the indexes for each important crop for each farmer. The next step was to convert these separate crop indexes for each farmer into one combined crop index for him. In doing this it was necessary to append some weights to the individual crop indexes. The weightage might have been uniform for all farmers or it might vary from individual to individual. We chose the latter alternative and the weight we adopted was the weight of the money value of the crop grown by the farmer during the year. The individual crop indexes of each farmer were weighted by the money value of the produce of each of the particular crops grown by him during the year. The combined weighted index thus arrived at was taken to be the crop index for the farm business as a whole. The crops that were taken into account in calculating the crop index were as follows:—(1) Bajri (2) Gram (3) Groundnut (*Japani, Pasarya,* etc.) (4) Groundnut (*Upatya*) (5) Jowar *kharif* (6) Jowar *rabi* (7) Potato *kharif* (8) Potato *rabi* (9) Turmeric (10) Wheat, *Bakshi* (11) Wheat, Spelt (12) Wheat, other.

An illustrative example will make clear the method used by us in compiling the crop index. Suppose that a cultivator grows three important crops A, B, and C and that the yield and value of the crops and the acreage under them is as given below:—

Crop	Acreage	Yield	Value
A	4·5	520 Seers	Rs. 52
B	3·3	220 ,,	Rs. 25
C	2·2	116 Maunds	Rs. 91

From these data we calculate the per acre yield of each crop of the cultivator in question. These per acre yields are for crop A, 115·5/. seers, for crop B, 66·7 seers, and for crop C, 52·7 maunds. Suppose that the average yields per acre for the whole region are for crop A, 102·8 seers, for crop B, 64 seers, and for crop C,42·5 maunds. Then if the average yield for each crop for the whole region is taken to be equal to 100, the crop index for each particular crop of this cultivator would be for A, 112 $\left(= \frac{115{\cdot}5 \times 100}{102{\cdot}8} \right)$; for B, 104; and for C, 124. For getting the combined crop index the weight of the money value of the crop is attached to the individual crop index. This gives us the final result as follows:—

$$\text{Crop Index} = \frac{\text{Sum of the Weighted Individual Crop Indexes}}{\text{Total Weight}}$$

$$\frac{(112 \times 52) + (104 \times 25) + (124 \times 91)}{52 + 25 + 91}$$

$$= \frac{19{,}708}{168} = 117{\cdot}3$$

The yield of individual crops would depend chiefly upon the quality of the soil and on farming practice. Rich or poor soil does most appreciably affect yields; careful or intense farming may also increase them. The character of the rainfall would ordinarily determine the level of yields for the whole tract, though it might also bring about local variations in the yields of individual crops within the tract. The crop index thus measures a phenomenon which is composite in character. It measures the crop production of each business in realation to the average production for the tract; but the reasons for high or low production may be many. While it is not possible to disentangle them and to measure their influence it seems that the most important of the factors making for high or low productivity is the quality of the land.

Table Nos. 45 and 46 set out data relating to farm business classified according to groups of crop indexes and the incomes and profits earned. The broad indications given by the tables are clear. There is a definite tendency for high incomes and profits to be definitely associated with businesses for whom the crop index is high. On the other hand, farm businesses falling within groups of low crop indexes definitely show low farm incomes and a high proportion of loss. The per acre yield of crops in the business is thus seen to be an important element in profitability. This seems to indicate definitely that an attempt to increase, if possible, yields in the individual business would be one way to increase the capacity to earn profits.

TABLE No. 45

Crop Index—Farm Income (1937-38).

Crop Index → / Farm Income Rs. ↓	Below 60%	60%—Below 80%	80%—Below 100%	100%—Below 120%	120%—Below 140%	140 %—Below 160%	160 %—Below 180%	180 %—Below 200%	200% and above	Total
	1	2	3	4	5	6	7	8	9	10
Below -50	8	11	6	4	1	1	...	...	2	33
-50 to below 0	10	17	18	17	7	4	3	...	...	76
0 „ „ 50	13	20	29	31	22	9	6	3	1	134
50 „ „ 100	4	13	22	26	25	19	8	3	2	122
100 „ „ 150	1	5	10	23	17	13	3	2	7	81
150 „ „ 200	1	...	7	5	11	5	1	1	1	32
200 „ „ 250	...	1	4	5	6	3	3	3	3	28
250 and above	...	1	3	7	8	12	11	6	3	51
Total ...	37	68	99	118	97	66	35	18	19	557

TABLE No. 46

Crop Index—Net Profits. (1937-38).

Crop Index → / Net Profits Rs. ↓	Below 60%	60%—Below 80%	80%—Below 100%	100%—Below 120%	120%—Below 140%	140%—Below 160%	160%—Below 180%	180%—Below 200%	200% and above	Total
	1	2	3	4	5	6	7	8	9	10
100 and Above	...	...	2	2	3	5	1	3	1	17
50 to below 100	...	1	2	2	2	2	6	3	1	19
0 „ „ 50	1	1	4	7	7	9	6	1	4	40
-50 „ „ 0	3	5	14	17	22	14	7	4	2	88
-100 „ „ -50	7	15	19	31	24	16	7	3	4	126
-150 „ „ -100	10	16	24	22	19	9	5	...	4	109
-200 „ „ -150	5	20	16	21	9	4	3	2	1	81
-300 „ „ -200	8	8	15	11	9	5	...	...	2	58
Below —300	3	2	3	5	2	2	...	2	...	19
Total ...	37	68	99	118	97	66	35	18	19	557

CHAPTER VII

CONCLUSION

The objectives, at which a survey of farm business usually aims, are the presentation of a general picture of the economy of a tract and the search for factors which bear upon the size of incomes and profits in it. Both these objectives demand a sample which is representative and which is of a given minimum size. In Chapter I we have described the methods by which we chose our sample, and our sample will be seen to have a representative character. The set of averages that we present in Chapter V may thus be taken to indicate correctly the general nature of the agricultural economy of the tract. In this connection we may comment on the contention, sometimes put forward, that the results of the survey method may be checked by cost accounting studies. It has to be noted that not only the methods but even the possible objectives of the two types of studies are different. The strictest accuracy in the measurement of a few units cannot compensate for the difference in character of data made by the smallness of the sample. A glance at the figures relating to individual village samples given in Chapter V will indicate the range of variations even in this comparatively homogeneous tract. A study by the cost accounting method of, say 25, farmers in this tract would have given more accurate results about those 25 farmers; but it could not have been used as a check on averages yielded by the less intensive study of, say, 500 farmers. The sample usually covered by cost-accounting studies is again so small that it cannot be divided into sub-classes for purposes of comparison *inter se*. When the sample is large, each sub-class can also be made large enough to warrant us in basing conclusions on the data relating to it. In Chapter VI we have indicated one important way in which the study of sub-classes can be pursued. We have shown how it is possible to obtain broad indications regarding elements which make for profits or losses in the tract, from such a study. It is only on representative and ample data of this character that agricultural policy for a tract can be based. And the main claim for the survey method is that it is the only one which makes such studies possible.

Our investigation not only proves the possibility of the use of the survey method in India but also gives, we hope, guidance regarding modifications and adaptations rendered necessary by Indian conditions. As this adaptation was the main aim of our project we have discussed it in detail in a separate part (Part I) of the report. This discussion will reveal that there are no considerable diffculties in the application of the survey method to Indian conditions, but that certain precautions and modifications are essential. These modifications, however, do not change the character of the method or of the data yielded by it; and though they make the work somewhat more laborious than in other countries, the method still remains cheap and expeditious.

In conclusion, a little may be said regarding the issues raised in Chapter VI. It will be remembered that, among other things, the data show the uneconomic character of the very small farm, the unprofitable character of certain crop combinations, the comparatively better terms afforded by cash tenancy and the importance of the income yielded by the livestock business. This study of farm business thus raises in a concrete form some problems, which demand attention. The farm business study presents by itself a broad picture of the agricultural economy of a tract. In doing this it reveals the main problems with which peasants in that tract are faced. In order to help the cultivator in solving these problems and in order to be able to frame a detailed agricultural policy it would be necessary to follow up the general survey by a detailed investigation of the individual problems raised.

APPENDIX

Crops or Trees	Botanical Names
Bajri	*Pennisetum typhoideum*
Banana	*Musa sapientum*
Babhul	*Acasia arabica*
Betelvine	*Piper betle*
Chillies	*Capsicum annum*
Coriander	*Coriandrum sativum*
Gram	*Cicer arietinum*
Groundnut	*Arachis hypogaea*
Guava	*Psidium gujava*
Hulga	*Dolichos biflorus*
Jowar (Kharif) or 'Argad'	*Andropogon sorghum*
Jowar (Rabi) or 'Shalu'	
Karala	*Guizotia abyssynica*
Linseed	*Linum usitatissimum*
Matki	*Phaseolus acontifolius*
Mug	*Phaseolus Mungo*
Onion	*Allium cepa*
Orange	*Citrus aurantium*
Pea	*Pisum sativum*
Pomegranate	*Punica granatum*
Potatoe	*Solanum tuberosum*
Safflower	*Carthamus tinctorius*
Sugarcane	*Saccharum officinarum*
Tur	*Cajanus cajan*
Turmeric	*Curcuma longa*
Udid	*Phaseolus radiatus*
Wheat	*Triticum pilosum*
Wheat (Spelt) or 'Khapala'	*Triticum æstivum*

SELECT BIBLIOGRAPHY

I. The Survey Method

1. Black, J. D.—Research in Farm Management. Scope and Method Series. Bulletin No. 13, Social Science Research Council, (1932). U. S. A.
2. Bridges, A.—Survey Method as an Approach to the Study of Agricultural Economics. Agricultural Economic Research Institute, Oxford, (1928). [A Paper read at a conference of the Agricultural Economic Society].
3. Dixey, R. N.—Method of Field Experimentation. Agricultural Economic Research Institute, Oxford. [Reprint from the Journal of the Ministry of Agriculture, July 1929].
4. Dixon, H. M. and Hawthorne, H. W.—A Method of Analyzing the Farm Business. Farmers' Bulletin No. 1139. United States Department of Agriculture. Issued in 1920 (Revised Edition, 1925).
5. Hopkins, J. A.—The Uses of Efficiency Factors in Analysis of Farm Records. Research Bulletin No. 160. Agricultural Experiment Station, Ames, (Iowa.) 1933.
6. Maxton, J. P.—Survey Method of Research in Farm Economics. H. M. Stationery Office, London, 1929. Published on behalf of the Agricultural Economic Committee of the Empire Marketing Board.
7. Orwin, C. S.—Method of Research in Agricultural Economics. Agricultural Economic Research Institute, Oxford.
8. Spillman, W. J.—Suggestions concerning Checking and Tabulating Farm Management Survey Data. Farm Circular No. 1. U. S. D. A., 1916, (A Desk Manual for Investigators.)
9. Spillman, W. J.—Validity of the Survey Method of Research, Bulletin No. 529. U. S. D A., Washington, D. C., 1917.
10. Tolley, H. R.—A Method of Testing Farm Management Data and Cost of Production Data for Validity of conclusions. Circular No. 307, U.S.D.A., Washington, D.C., 1924.
11. Warren, G. F.—Agricultural Surveys. Bulletin No. 344' Cornell University, 1914. U. S. A.
12. Warren, S. W.—Multiple Correlation Analysis as Applied to Farm-Management Research; Memoir, 141, Cornell

University, Agricultural Experiment Station, Ithaca, N.•Y., 1932.

Studies and Surveys

1. Adams, R. L. and Wann, J. L.—Part-time Farming for Income. Bulletin No. 581. Agricultural Experiment Station, University of California, Berkeley (California), 1934.
2. Bess, R. S., Brown, W. S., and Wilcox, L. P.—Cost and Efficiency in Pear Production in the Rogue River Valley. Bulletin No. 267. Agricultural Experiment Station, Oregon State Agricultural College, Corvallis, 1930.
3. Buck, J. L.—Chinese Farm Economy. Published by the Chicago University Press, 1930.
4. Carslaw, R. McG.—Economic Survey of Hertfordshire Agriculture, Report No. 18, Cambridge University (England.) 1931.
5. Carslaw, R. McG., Menzies-Kitchin, A. W., Graves, P. E.—Economic Survey of Agriculture in the Eastern Counties of England 1931. Report No. 19, Cambridge University, (England), 1932,
6. Carslaw, R. McG., Menzies-Kitchin, Graves, P. E.—Economic Survey of Agriculture in the Eastern Counties of England, 1932, Report No. 21, Cambridge University (England.) 1933.
7. Carslaw, R. McG. Menzies-Kitchin, Graves, P. E.—Economic Survey of Agriculture in the Eastern Counties of England, 1933. Report No. 22, Cambridge University, (England), 1934. Survey of 1,085 Farms.
8. Clark, H. W. and Michael, G. W.—Farm Management. Ontario Bulletin No. 278, Ontario Department of Agriculture, Toronto (Ontario), 1920.
9. Crickman, C. W.—Farm Organization and Management Studies in Warren County, Iowa. Bulletin No. 229. Agricultural Experiment Station, Iowa State College of Agriculture, Ames, (Iowa), 1925.
10. Currie, J. R. and Long, W. H.—An Agricultural Survey in South Devon. Report No. 1. Seale-Hayne Agricultural College, Newton Abbot (Devonshire), 1929.
11. Harris, G. H.—Small-Fruit Farming in British Columbia. Bulletin No. 101. Department of Agriculture, Victoria (British Columbia), 1927.

12. Hawthorne, H. W. and Dixon, H. M.—Farm Organization and Management in Clinton County, Indiana. Department Bulletin No. 1258, U. S. D. A., Washington, D. C., 1924.

13. Hendrickson, C. L.—An Economic Study of the Agriculture of the Connecticut Valley. Bulletin No. 165. Connecticut Agricultural College, Storrs (Connecticut), 1930.

14. Imperial Council of Agricultural Research—Report on the Cost of Production of Crops in the principal Sugarcane and Cotton tracts in India. Vol. II. (Bombay), Delhi, 1938.

15 King, J. S.—Profitableness of Farming in Scotland (Report of the Department of Agriculture for Scotland on the Financial Results obtained on certain groups of farms in Scotland in 1928-29). Edinburgh, 1931.

16. Leitch, A.—Farm Management. Ontario Bulletin No. 278. Ontario Department of Agriculture, Toronto (Ontario), 1920.

17. Long, W. H.—An Economic Investigation of Devon and Cornish Farms. Seale Hayne Agricultural College, Newton Abbot (Devonshire), 1927.

18. Mallory, L. De. W.—Tree Fruits Survey, 1921-25. Circular No. 49, Department of Agriculture, Victoria (British Columbia), 1929.

19. Merchant, C. H.—An Economic Survey of the Apple Industry in Maine. Bulletin No. 339. Maine Agricultural Experiment Station, Orono (Maine), 1927.

20. Merchant, C. H.—An Economic Study of 239 Blueberry Farms in Washington and Hancolk Counties, Maine. Bulletin No. 351, Maire Agricultural Experiment Station University of Maine, Orono (Maine), 1929.

21. Nicholls, W. D.—An Economic Study of 270 farms in Union and Henderson Counties. Bulletin No. 261. Agricultural Experiment Station, University of Kentucky, Lexington (Kentucky), 1925.

22. Patil, P. C.—Preliminary Studies of Important Crops in the Bombay Deccan in the Post-war Period. Bulletin No. 186. Department of Agriculture, Bombay, (1932).

23. Patil, P. C. and Pawar, T. B.—Principles and Practice of Farm Costing with Farm Studies. Department of Agriculture, Bombay, 1933

24. Rouse, W. L., Hawthorne, H. W. and Galloway, Z. L.—Farm Organization and Management in Grayson County. Bulletin No. 1931. Agricultural Experiment Station, University of Kentucky, Lexington. (Kentucky) 1931.

25. Scoville, G. P.—An Economic Study of Grape Farms in the Eastern U. S. (Part I.) Bulletin No. 605. Cornell University Agricultural Experiment Station, Ithaca, (New York) 1934.

26. Scoville, G. P.—An Economic Study of Grape Farms in the Eastern U. S. (Part II.) Cornell University Agricultural Experiment Station, Ithaca (New York), 1935.

27. Stewart, H. R., Kartar Singh and others—Farm Accounts in the Punjab. (Publications Nos. 12, 15, 19, 20, 21, 24, 26, 32, 35, 46, 53) The Board of Economic Inquiry Punjab. 1926 to 1937.

28. Thomas, E.—Financial Results of Strawberry Growing etc. Bulletin XLIII, Department of Agricultural Economics, University of Reading, Reading (England), 1932.

29. Venn, J. A. and Carslaw, R. McG.—An Economic and Financial Analysis of six Eastern Counties Farms in 1924-25. Department of Agriculture, Cambridge (England).

30. Warren, G. F. and McCourt, W. E.—An Apple Orchard Survey of Wayne County, N. Y. Bulletin No. 226. Cornell University, Agricultural Experiment Station, Ithaca (New York), 1905.

31. Warren, G. F.—An Apple Orchard Survey of Orleans County. Bulletin No. 229. Cornell University, Agricultural Experiment Station, Ithaca (New York), 1905.

32. Warren, S. W.—Economic Study of Agriculture in N. Livingston County (New York). Bulletin No. 539. Cornell University, 1932.

33. Wilcox, R. H., Crickman, C. W. and Trummel, R. G.—Farm Management Factors that influence Farm Profits in S. W. Illinois, Bulletin No. 374. University of Illinois, Urbana (Illinois), 1931.